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Dkt. No. 34304/118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hamzeh Karami, et al.

Application No. : 09/844,726

Filed : April 27, 2001

For: : Absorbent Articles Having Improved Fastening System

Art Unit : 3761

Examiner : Jacqueline F. Stephens

Customer No. : 1912

RECEIVED

JUN 09 2004

OFFICE OF PETITIONS

**PETITION TO REVIVE AN UNINTENTIONALLY ABANDONED APPLICATION
PURSUANT TO 37 C.F.R. §1.137(b)**

Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

"Express Mail" mailing label No. EL 996361453 US	
Date of Deposit:	June 7, 2004
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
Name:	Alan D. Miller
Signature:	

Sir:

Applicants respectfully petition to revive the above-identified unintentionally abandoned application pursuant to 37 C.F.R. §1.137(b). The fee for filing the subject Petition is \$1,330.00, and a check including this amount is enclosed.

Applicants are reviving the subject unintentionally abandoned application in order to 1) maintain co-pendency with continuation application papers which were entered by the Patent Office on February 27, 2004, and to 2) file a Notice of Appeal in connection with the subject application.

06/10/2004 AKELLEY 00000073 09844726

01 FC:1453 1330.00 OP

06/10/2004 AKELLEY 00000073 09844726

02 FC:1401 330.00 OP

Application No. : 09/844,726
Applicants : Hamzeh Karami, et al.
Filed : April 27, 2001
Page 2 of 5

Chronology of Events Resulting in Abandonment

1) A Final Office Action was issued in the subject application on August 26, 2003.

2) On February 23, 2004, papers were transmitted to the Patent Office by first class mail, including a check for \$2,120.00. The papers were entered by the OIPE on February 27, 2004. A copy of these papers is attached hereto as **Exhibit 1**. The papers were treated by the Patent Office as a proposed amendment in response to the August 26, 2003 Final Office Action. An extension of time was granted. As discussed below, applicants intended the papers filed in February 2004 to be a new continuation application claiming priority of the subject application and not a response to the August 26, 2003 Final Office Action.

3) On March 12, 2004, an Advisory Action was issued which indicated that the papers filed in February 2004 were considered as proposed amendments that would not be entered because they present additional claims without canceling a corresponding number of finally rejected claims.

Statement That Delay Was Unintentional

The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 C.F.R. §1.137(b) was unintentional. Evidence that the delay was unintentional and of applicants' intention to maintain prosecution is applicants' reply filed in February 2004, a copy of which is attached as Exhibit 1 and which is discussed below.

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Applicants : Hamzeh Karami, et al.
Filed : April 27, 2001
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Reply

A) Continuation Application

Applicants request that the papers filed in February 2004 be entered as intended as a new continuation application that claims priority of the subject application. A copy of these papers is attached as Exhibit 1. Applicants note that the papers include the following materials.

1) A postcard dated February 23, 2004 identifying the papers as a "Continuation of USSN: 09/844,726" and listing the contents as "Preliminary Amendment, Continuation Application with Claims 1-133, Unexecuted Declaration, Check for \$2,120.00." The postcard includes a Client/Matter No. for a new continuation application ("34294/46") which is different than the Client/Matter number for the subject application. A copy of the postcard as date stamped by the Patent Office is also enclosed.

2) Check for \$2,120.00, which bears the notation "Cont. of 09/844,267" and "34294/46."

3) a PRELIMINARY AMENDMENT, including the identification "CONTINUATION OF Application No.: 09/844,726" and "Docket No.: 34294/46." The Preliminary Amendment includes an amendment to paragraph [0001] of the specification to recite "This application is a continuation of application Serial No. 09/844,726, filed April 27, 2001..."

4) copy of the specification, as published as U.S. Patent Application Publication No. US 2001/0041879 A1.

Should the Patent Office find that there is a deficiency in payment of an extension fee for maintaining pendency of the subject application (09/844,726) for purpose of applicants' submission of a continuation application in February 2004, authorization is hereby granted to charge the amount of any such fee deficiency to Deposit Account No. 01-1785.

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Applicants : Hamzeh Karami, et al.
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Page 4 of 5

B) Notice of Appeal

Applicants attach hereto as **Exhibit 2** a Notice of Appeal in connection with the subject application. The fee for filing a Notice of Appeal is \$330.00, and a check including this amount is enclosed.

Terminal Disclaimer

A Terminal Disclaimer is not required with the filing of this Petition since the subject application is a utility application filed after June 8, 1995.

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Applicants : Hamzeh Karami, et al.
Filed : April 27, 2001
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Conclusion


Applicants respectfully request acceptance of this Petition. If there are any outstanding minor matters that delay the granting of the Petition, the Patent Office is requested to telephone the undersigned attorney.

A check for \$1,660.00 is enclosed to cover the \$1,330.00 fee for filing a Petition to Revive an Unintentionally Abandoned Application and the \$330.00 fee for filing a Notice of Appeal. No additional fee is deemed necessary in connection with the submission of this Petition; however, if any other fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 01-1785. Please credit any overpayment to Deposit Account No. 01-1785.

Respectfully submitted,

AMSTER, ROTHSTEIN & EBENSTEIN LLP
Attorneys for Applicants
90 Park Avenue
New York, NY 10016
(212) 336-8000

Dated: New York, New York
June 7, 2004

By: 
Alan D. Miller
Registration No. 42,889

The stamp of the Patent/Trademark/Copyright Office Mail Room hereon acknowledges the receipt of the below-identified document(s) on the date indicated by such stamp.

Client/Matter No. 34294/46 Exp. Mail No.: 34294/46 Cab
Date Mailed: 2/23/04 Atty.: NLR Sec.:
In re: (Applicant or Parties): Mamzeh Karami

Serial No. or Proceeding No.: Continuation of USSN: 09/844,726

Title of Document(s)
Forwarded: Preliminary Amendment, Continuation Application with Claims 1-133,
Unexecuted Declaration, Check for \$2,120.00



FIRST QUALITY ENTERPRISES

The stamp of the Patent/Trademark/Copyright Office Mail Room hereon acknowledges the receipt of the below-identified document(s) on the date indicated by such stamp.

Client/Matter No. 34294/46 Exp. Mail No.:
Date Mailed: 2/23/04 Atty.: NLR Sec.: Cab
In re: (Applicant or Parties): Mamzeh Karami
Serial No. or Proceeding No.: Continuation of USSN: 09/844,726
Title of Document(s)
Forwarded: Preliminary Amendment, Continuation Application with Claims 1-133,
Unexecuted Declaration, Check for \$2,120.00

FIRST QUALITY ENTERPRISES

AMSTER, ROTHSTEIN & EBENSTEIN	
DOCKETED	2-24-04
CLIENT	34294/46
DUE DATE	
ACTION	
DKT BY	AP
REVIEWED BY	CB

AMSTER, ROTHSTEIN & EBENSTEIN LLP

02/13/04 02-13-04 165337 0213 NR 3589 CHECK NO.: 145330

INVOICE DATE	VOUCHER #	INVOICE #	DESCRIPTION	CLIENT NO.	INVOICE AMOUNT
02-13-04	165337	0213 NR		34294-0020	2,120.00
TOTAL:					2,120.00

AMSTER, ROTHSTEIN & EBENSTEIN LLP

90 PARK AVENUE
NEW YORK, NY 10016

CHECK NO. 145330

The Chase Manhattan Bank
60 E. 42nd Street
New York, NY 10017

1-2/210

DATE 02/13/04

AMOUNT

TWO THOUSAND ONE HUNDRED TWENTY AND 00/100 DOLLAR

\$ 2,120.00

COMM. OF PATENTS & TRADEMARKS

PAY

TO THE

ORDER OF

Andrew T. Shapiro

Cash of 09/8447267

34294/46

11 145330 1:021000021: 007126384211

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CONTINUATION OF

Application No.: 09/844,726

Confirmation No. 4079

Applicant : Hamzeh Karami

Filed : April 27, 2001

TC/A.U. : 3761

Examiner : Jacqueline F. Stephens

Docket No. : 34294/46

Customer No. : 1912

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope, with sufficient postage, addressed to the Director of the United States Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450 on the date which appears below:
Name: NEAL L. ROSENBERG
Signature: *Neal L. Rosenberg*
Date: 2-23-04

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to examination of the above-identified application, please amend the same as follows:

AMENDMENT TO THE SPECIFICATION begins on page 2.

REMARKS begin on page 4.

AMENDMENT TO THE SPECIFICATION

Amend Paragraph 0001 as follows:

[0001] This application is a continuation of application Serial No. 09/844,726, filed April 27, 2001, which is, in turn, a continuation-in-part of application Serial No. 09/797,334, filed March 1, 2001, which is, in turn, a continuation-in-part of application Serial No. 09/376,282, filed August 18, 1999, which is, in turn, a continuation-in-part of application Serial No. 09/097,198, filed June 12, 1998, which is, in turn, a continuation-in-part of application Serial No. 09/149,265, filed September 8, 1998.

Between Paragraphs 0077 and 0078, insert a new paragraph as follows:

Thus, as described and shown in abandoned parent Patent Application No. 09/376,282 (see the paragraph bridging pages 15-16 and FIG. 28 thereof), the ear or lateral segments may be made partly or entirely from a nonwoven fabric and serve as female receiving surfaces for engagement by a male Velcro fastening means. Accordingly, no female Velcro fastening means is required on the outer surface of the ear segments since the male Velcro fastening means (whether on one of the ear segments or adjacent the outer edges of the distal end of the center piece) can be engaged onto the female receiving surface of the ear segments. The appearance of such a "loopless" embodiment of the present invention (that is, an embodiment which is devoid of female Velcro fastening means) is presented in FIG. 1 of the present application wherein the female Velcro fastening means 127, 129, 131 are not shown on either of the ear segments 117, 119 or on the distal end of the center piece 121. In this case the hook-

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Amdt. dated February 13, 2004

Reply to Office Action of August 26, 2003

like mini-projections of the three male Velcro fastening means 125, 137, 139 engage nonwoven outer surface portions of the ear segments 117, 119.

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Amdt. dated February 13, 2004
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REMARKS

Claims 1-133 are presented for Examination.

As filed, the application is a copy of U.S. Patent Application Publication No. 2001/0041879 A1, published November 15, 2001, for Application No. 09/844,726, filed April 27, 2001.

New Claim 133 is added to the originally filed application, and the Abstract is relocated to the rear. This Amendment updates Paragraph 0001 ("Related Applications") and adds a new paragraph between Paragraphs 0077 and 0078 to incorporate the substance of the "loopless" embodiment description of abandoned parent Patent Application No. 09/376,282 (see the paragraph bridging pages 15-16 and FIG. 28 thereof, in particular). This incorporation of matter from a parent patent application is not deemed to introduce new matter.


The embodiment of Claim 133 is illustrated in FIGS. 1 (in use) and 36 (prior to use).

In view of the above amendments and remarks, a prompt and favorable action is respectfully requested.

Respectfully submitted,

AMSTER, ROTHSTEIN & EBENSTEIN LLP
Attorneys for Applicant
90 Park Avenue
New York, New York 10016
(212) 336-8000

Dated: New York, New York
February 13, 2004

By: 
Neal L. Rosenberg
Registration No.: 21,088

ABSORBENT ARTICLES HAVING IMPROVED FASTENING SYSTEM

RELATED APPLICATIONS

[0001] This application is a continuation-in-part of application Ser. No. 09/797,334 filed Mar. 1, 2001, which is, in turn, a continuation-in-part of application Ser. No. 09/376,282 filed Aug. 18, 1999, which is, in turn, a continuation-in-part of application Ser. No. 09/097,198 filed Jun. 12, 1998, which is, in turn, a continuation-in-part of application Ser. No. 09/149,265 filed Sep. 8, 1998.

FIELD OF THE INVENTION

[0002] The present invention relates to absorbent articles such as disposable diapers, infant and adult incontinent briefs and underpants used for absorption and containment of urine and other body exudates. More particularly, this invention relates to a fastening system used in such articles for providing an improved and effective means of detachably securing the front and rear of such articles. In one particular aspect, this invention relates to providing such fasteners in T-shaped briefs. In another aspect, this invention relates to the dimensions of the brief and several components of the brief as well as the locations of some of the components.

BACKGROUND OF THE INVENTION

[0003] The aforementioned copending application Ser. No. 09/376,282 describes an embodiment of the invention therein which is directed to a generally T-shaped brief, e.g., a diaper which comprises a chassis having two intersecting portions which together define a generally T-shaped configuration when the chassis is laid out flat and viewed in stretched position. One of the two portions or pieces is a crosspiece comprising opposed lateral segments or wings adapted to be wrapped on the waist of a wearer of the diaper such as to overlap each other, and the second portion or piece is vertical relative to the crosspiece and has a proximal end, and a distal end which can be passed under the crotch and folded upwardly and over or under the overlapped wings. The T-shaped diaper described in said copending application is provided with a fastening system designed to secure the diaper tightly but comfortably around the waist as illustrated in FIGS. 23-28 of said application. Another variant of the invention, i.e., a generally H-shaped diaper as shown in FIG. 28. The disclosure of said application Ser. No. 09/376,382 is fully incorporated herein by reference.

[0004] T-shaped diapers have received widespread attention and acceptance due, in part, to their relative ease of fabrication and use, and the comfort they provide to the wearer as well as the protection they afford against leakage of urine and body exudates. A variety of T-shaped briefs or diapers have been described in the prior art.

[0005] For example, one T-shaped diaper was described in U.S. Pat. No. 4,051,854 issued to Gabrielle Leonie Aaron on Oct. 4, 1977. The diaper described therein has a center flap and two ear flaps which, when laid flat, defines a T-shape configuration as shown in FIGS. 1 and 3 of that patent. Fastening means are provided in the form of multiplicity of hooks and loops for fastening the ear flaps to the center flap.

[0006] Another T-shaped diaper is described in U.S. Pat. No. 4,995,873 issued to Jacklyn M. Knight on Feb. 26, 1991

which comprises a crosspiece and an intersecting piece which together define the T-shape configuration of the diaper when laid out in flat position. The crosspiece has opposite ends or wings which encircle the waist in an overlapping manner and the intersecting piece passes under the crotch and upwardly and over the crosspiece. Releasable fastening means such as press-on/rip-off adhesive or Velcro® strips are employed to attach the intersecting piece to the crosspiece.

[0007] Whether using a T-shaped diaper or other types of diapers, it is essential that the diaper meet at least two significant criteria, i.e., comfort to the wearer and protection against leakage of body fluids and exudates. In order to achieve these objectives, many prior art workers in the field have focused on providing the diaper with an effective fastening system. Indeed, in the aforementioned application Ser. No. 09/372,382, the inventors describe a fastening system for T-shaped diaper designed to achieve the foregoing objectives. Thus, in the T-shaped diaper described therein, one female fastening means is provided on the lateral wing or segment of the crosspiece and at least one male fastening means is provided on the other lateral wing or segment of the crosspiece such that when the two lateral segments are wrapped around the waist and overlap each other, the male fastener engages the female fastener. In addition, a pair of spaced apart female fasteners are provided on said crosspiece between the end fasteners in the wings such that when the two wings are wrapped around the waist and folded over each other as aforesaid, said two spaced apart female fasteners will be engaged by a pair of spaced apart male fasteners located at the distal end of the vertical piece of the T-shaped diaper.

[0008] As it can be seen from the description in the aforementioned application Ser. No. 09/376,382 and the prior art in general, a variety of fasteners are employed such as, e.g., adhesive tape tabs, Velcro®, fabrics which act as female surface for a male fastener, so-called hook and loop fasteners, or even mechanical elements. As it can also be appreciated, the concern over providing a leak-proof, and good fitting diaper is not limited to a particular shaped diaper. Regardless of their shapes, it is essential that the diaper be provided with an effective fastening means which assures tight but comfortable wear, and affords protection against leakage of fluid and body exudates.

[0009] Recently, in U.S. Pat. No. 5,906,604 issued on May 25, 1999 to Ronnberg et al., the patentee describes an attachment means for a belt used with an absorbent garment. The belt is either integrated with the absorbent garment, or it can be a separate belt attached to the absorbent garment by means of a releasable attachment such as hook and loop type fastening means, e.g., VELCRO®. Other fastening systems are described in the patents referred to in the aforementioned Ronnberg et al. patent as well as a host of other prior art patents.

[0010] A mechanical fastening system for absorbent articles is described in U.S. Pat. No. 5,279,604 issued to Robinson et al. on Jan. 18, 1994. The mechanical fastening system described therein comprises a tape tab having a first fastening element, a landing member comprising a second fastening element which is engageable with the first fastening element, and an additional fastening element for securing the absorbent article in a manner which facilitates disposal of the article.

[0011] Notwithstanding the plethora of prior art patents describing a variety of fastening systems for different diapers, there is still a need for a fastening system which is inexpensive, simple to apply to the garment and is effective in preventing leakage of body fluids and exudates from the diaper.

[0012] Accordingly, it is an object of the present invention to provide an absorbent article, e.g., a diaper, which has an improved fastening system.

[0013] It is also an object of this invention to provide such diaper with a fastening system which is easy to apply to the diaper and which is adjustable to assure comfort and fitness to the body of the wearer, and which can afford maximum protection against leakage of urine and body exudates.

[0014] It is another object of this invention to provide a diaper having an improved fastening system wherein the diaper, when laid out flat, has a T-shaped configuration.

[0015] It is yet another object of this invention to provide a T-shaped diaper of certain dimensions which has components of defined dimensions and advantageous relative locations.

[0016] The foregoing and other features and advantages of the present invention will be appreciated from the following detailed description taken with the accompanying drawings.

SUMMARY OF THE INVENTION

[0017] The present invention provides a diaper, such as a T-shaped diaper, having novel fastening system. The T-shaped diaper has a chassis comprising two intersecting portions or cross pieces which define the T-shape configuration of the diaper when viewed in stretched position. One portion is a lateral piece having lateral segments or wings which are adapted to be wrapped around the waist of a wearer of the diaper. The second portion is a vertical piece having a proximal end attached to the chassis and a distal end with tape tabs. The vertical portion is adapted to be passed under the crotch region of the diaper, folded thereover and attached to landing zones on the surface of the lateral segments by the tape tabs located at said distal end.

[0018] In order to assure fit and comfort, a novel tape tab is provided at or near one of said segments or wings, e.g., the right segment when the diaper is viewed in front stretched position. Tape tabs are also provided at the distal ends of the intersecting vertical portion which may be similar to the tape tab located on the wing of the diaper.

[0019] In accordance with this invention several fastening systems are disclosed which are more fully discussed in the detailed description of the present invention.

[0020] The relative dimensions of the wings and the chassis components of the absorbent article, the width of the landing zones and their and location, the relaxed overall dimensions of the chassis are factors which contribute to providing a commercially attractive and easy-to-package brief which fits snugly and comfortably around the body of the wearer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] In the drawings, wherein like reference numerals are employed to designate like parts wherever possible:

[0022] FIG. 1 is a perspective view of a T-shaped diaper in assembled form when worn by a wearer;

[0023] FIG. 2 is perspective view of the diaper in FIG. 1 showing the center vertical segment with its distal end partly folded upward and away from the diaper chassis and showing an insert and a belt attached together;

[0024] FIG. 3 is another perspective view of the diaper of FIG. 2 but showing the center vertical segment hanging more freely prior to assembling the diaper;

[0025] FIG. 4 is a stretched view of the diaper of FIG. 1 when it is laid out flat;

[0026] FIG. 5 is a sectional view taken along the line 5-5 of FIG. 4;

[0027] FIG. 6 is a view of a T-shaped diaper in stretched position employing a tape tab and landing zone fastening system according to one embodiment of the present invention;

[0028] FIG. 7 is a top view of the tape tab shown in FIG. 6, with the fastener tape in open, ready to be used position;

[0029] FIG. 8 is a sectional view taken along the line 8-8 of FIG. 7;

[0030] FIG. 9 is a sectional view taken along the line 9-9 of FIG. 6;

[0031] FIG. 10 is a partly perspective view of a diaper having a tape tab and landing zone fastening system ready for use;

[0032] FIG. 11 is a perspective view of the diaper shown in FIG. 10 in ready to be assembled position;

[0033] FIG. 12 is a view similar to FIG. 6 employing multi-layer tape tab and landing zone fastening system according to another embodiment of the present invention;

[0034] FIG. 13 is a top view of the multi-layer tape tab and landing zone fastening system of FIG. 12 with the fastener tape in open ready to use position;

[0035] FIG. 14 is a sectional view taken along the line 14-14 of FIG. 13;

[0036] FIG. 15 is a sectional view taken along the lines 15-15 of FIG. 12;

[0037] FIG. 16 is a stretched view of a T-shaped diaper similar to FIGS. 11 and 12 but employing a hook and loop fastening system according to a different embodiment of the present invention;

[0038] FIG. 17 is a top view of the hook system employed in FIG. 16 with the tape tab in open ready to be used position;

[0039] FIG. 18 is a sectional view taken along the line 18-18 of FIG. 17;

[0040] FIG. 19 is a sectional view taken along the line 19-19 in FIG. 16;

[0041] FIG. 20 is a view similar to FIG. 16 but employs a multi-layer hook and loop fastening system according to yet another embodiment of present invention;

[0042] FIG. 21 is a top view of the multi-layer hook and loop fastening system used in FIG. 20 with the tape tab in open ready to be used position;

[0043] FIG. 22 is a sectional view taken along the line 22-22 in FIG. 21;

[0044] FIG. 23 is a sectional view taken along the line 23-23 in FIG. 20;

[0045] FIG. 24 is a view similar to FIG. 10 employing a multi-layer hook and loop fastening system, and illustrates the diaper after the first attempt of fastening the tape system and peeling open the diaper to show the tape tabs as in FIG. 22.

[0046] FIG. 25 is a view similar to FIG. 20 wherein the diaper is partly elasticated;

[0047] FIG. 26 is a sectional view taken along the line 26-26 of FIG. 25;

[0048] FIG. 27 is a sectional view taken along the line 27-27 of FIG. 25;

[0049] FIG. 28 is a view similar to FIG. 16 with the distal end of the vertical section having laterally extended segments or wings;

[0050] FIG. 29 is a view similar to FIG. 20 with a male fastener at one wing and a female fastener is provided at the opposite wing;

[0051] FIG. 30 is a sectional view taken along the line 30-30 of FIG. 29;

[0052] FIG. 31 is a sectional view taken along the line 31-31 of FIG. 29;

[0053] FIG. 32 is a sectional view showing the reverse position shown in FIG. 30;

[0054] FIG. 33 is a sectional view showing the reverse position shown in FIG. 31;

[0055] FIG. 34 is a view similar to FIG. 16 having different tape tab positions at the distal end of the vertical portion;

[0056] FIG. 35 is a sectional view taken along the lines 35-35 of FIG. 34;

[0057] FIG. 36 is a stretched view similar to FIG. 25 wherein each wing segment is folded over itself;

[0058] FIG. 37 is a sectional view taken along the line 37-37 of FIG. 36;

[0059] FIG. 38 is a view of a diaper when it is laid out flat, such as shown in FIG. 6, illustrating the desired relative dimensions and other features of the invention which enhance fitness of the diaper, and

[0060] FIG. 39 is a sectional view taken along the line 39-39 of FIG. 38.

DETAILED DESCRIPTION OF THE DIFFERENT EMBODIMENTS OF THE INVENTION

[0061] Referring first to FIGS. 1-5, there is shown in FIG. 1, a diaper generally designated as 100 comprising a chassis having a back waist region 101 and a front waist region 103 (which may be elasticized), a crotch region 105 and a pair of leg openings 107, 109 through which extend the legs of

the wearer. The diaper 100 also comprises an absorbent core or pad 111 which is disposed between a liquid pervious cover sheet 113 and a liquid impervious backsheet 115 as illustrated in FIG. 5 and described hereinafter. The back waist region 101 comprises a mid region 123 having a pair of opposed laterally extending segments or ears 117, 119 and a center intersecting segment or flap 121 which extends vertically downward relative to the ears 117, 119 as illustrated in FIGS. 2, 3 and 4. The ear segments 117, 119 are adapted to be wrapped around the waist, and the center vertical segment 121 is adapted to be passed under the crotch region 105, pulled up and folded over the crotch region and engaged onto the ear segments 117, 119 as hereinafter described. In order to assure a more perfect fit of the diaper around the torso of the wearer, the ear segments 117, 119 and the center flap 121 are provided with fastening means at strategic locations on their respective surfaces. For example, in the embodiment shown in FIG. 4, the front surface 123A of the mid region 123 is provided with a male Velcro-type fastening means 125 adjacent the right lateral end of the ear segments 119, and the reverse surface 123B opposite the surface 123A is provided with a female Velcro-type fastening means 127, 129, 131. The distal end 133 of the center segment 121 has a top surface on which is provided a pair of opposed, generally parallel and spaced apart male Velcro-type fastening means 137, 139. As it will become apparent from the description of the assembly of the diaper during its use, the fastening means on the ear segments and the center segment are located at such positions as to result in a remarkable tight fit diaper which is highly effective against leakage of fluid and body exudates.

[0062] In use, the ear segment 117 is wrapped around the waist first, followed by wrapping the ear segment 119 around the waist to overlap the ear segment 117, and the male Velcro fastener 125 is engaged onto the female Velcro fastener 131. The center segment 121 is then passed under the crotch of the wearer and folded thereover and upwardly onto the top surface 123A of the diaper, and then engaging the male Velcro fasteners 139 and 137 onto the corresponding aligned female Velcro fasteners 127 and 129 respectively. By proper spacings and alignments of the male/female Velcro fasteners, the fasteners will mate, i.e., interengage, thus resulting in a more perfect fit to the waist of the wearer and prevent leakage of the body fluids and exudates out of the diaper.

[0063] The materials and fabrics used in making the diapers of the present invention are generally of the type and variety known in the art and are described, for example, in U.S. Pat. Nos. 4,695,278 and 4,795,454 and in copending, commonly assigned application Ser. No. 09/149,265, filed Sep. 8, 1998, the disclosures of which are fully incorporated herein by reference. Thus, the liquid pervious cover sheet is a compliant soft material which is skin friendly and does not cause rash or irritation. Such materials include porous foams, reticulated foams, plastics, natural fibers such as woods or cotton fibers, synthetic fibers made of polyester or propylene available from First Quality Fibers, Inc., McElhattan, Pa., or made from a combination of such materials.

[0064] The absorbent pad or core may be manufactured from a wide variety of liquid absorbent materials of the type usually used in manufacturing disposable diapers and other absorbent articles. Such materials include comminuted

wood pulp, creped cellulose wadding, absorbent foams and sponges, super absorbent polymers, or a combination of said materials.

[0065] The acquisition layer is usually made of chemically bonded nonwoven polyester available from American Non-wovens, Columbus, Miss. Preferably, the width of this layer is substantially the same as the width of the crotch absorbent core. This core may be made of wood pulp fibers and super absorbent polymers (SAP) such as IM 7000 series available from Clarian Products, Inc., Portsmouth, Inc., Va., and Chemdal 2000 series, available from Chemdal Inc. Palantine, Ill. Alternatively, the absorbent core may be made of dual layer construction, in which case, the absorbent polymer may be securely positioned between each layer of the absorbent material.

[0066] The film backing is usually a polyethylene layer which is liquid, air and preferably vapor impermeable, and is placed under the absorbent core to prevent the body exudates from leaking and otherwise soiling the user's bed and clothing. The width and length of the backing film are generally wider and longer than the width and length of the absorbent core. Polyethylenes suitable as backing film for the purpose of this invention are available from Clorox Plastics, Cincinnati, Ohio. The topsheet is also preferably made of spunbond nonwoven polypropylene and is usually coextensive with the backing film. In general, however, the various layers are of the type and materials well known in the diaper industry and within the scope and knowledge of those versed in this art.

[0067] In the T-shaped diaper described and illustrated by reference to FIGS. 1-5, the fastening system employed is the system described in the aforementioned application Ser. No. 09/376,282, the disclosure of which is fully incorporated herein by reference. The ensuing description, however, will be directed to the novel fastening system of the present invention, and will be described in connection with a T-shaped diaper, although it may be employed in other absorbent articles as well.

[0068] A first embodiment of the fastening system of the present invention is shown in FIGS. 6-9 and a diaper incorporating this fastening system is shown, in perspective view, in FIGS. 10-11. As shown in FIGS. 10 and 11, the diaper generally designated as 200 comprises a chassis having a back waist region 201 a front waist region 203 and a crotch region 205 and an absorbent core 207. A pair of opposed lateral segments or wings 209, 211 extend from the respective edges of the back waist region 201, and a generally vertical intersecting piece 213 having a proximal end 213A attached to the diaper chassis and a distal end 213B with a pair of opposed tapes 215, 217 disposed at each side of the intersecting piece near the distal end thereof.

[0069] Referring to FIGS. 6-9, there is shown in FIGS. 6 and 7 the tape tab 219 having a portion 219A used to fasten the tape to the diaper, and a second portion 219B permanently attached to the bottom surface of the wing 209, i.e., the surface away from the skin of the wearer (see FIGS. 8 and 9). The tape portion 219 has a top surface 221 covered with a pressure sensitive adhesive, and an opposed bottom surface made of a suitable plastic such as, e.g., polyethylene or polypropylene film, or other material such as, e.g., woven or nonwoven. As shown in FIG. 7, the fastening system of this embodiment comprises a release tape 223 having a top

surface coated with a release agent such as a silicone compound, and an opposed bottom adhesive surface with a portion of the release tape 223 attached to the portion 219A and the other portion adhered to the top surface of the wing 209. Before use, the portion 219A is folded over the portion 219B in order to protect the adhesive surface during transportation of the product. For convenience of manipulation, the lateral edge of the tape 219 is folded upon itself so as to form an adhesive-free grip strip (Finger lift) 225.

[0070] The other component of the fastening system in this embodiment of the invention are landing zones (tapes) 227, 229 located on the lateral segments or wings 209 and 211, respectively. The size of each landing zone may be varied if desired depending on the size of the diaper. Each landing zone has an outer surface covered, at least partly, with a release agent such as a silicone compound. This allows the tape tab 219 to be positioned and repositioned on the landing zone 229 several times without tearing the diaper fabric.

[0071] In use, the tape tabs 219 is peeled away from the tape tab 219A by gripping and pulling away the grip strip 225. The diaper wings 209 and 211 are then wrapped around the waist of the wearer and the pressure sensitive surface 221 of the tape 219 is secured to the landing zone 229. Thereafter, the insert piece 213 is passed under the crotch, folded thereover and the tape tabs 215 and 217 located at the distal end of the insert piece is releasably secured to the landing zones such that tape tab 215 is secured to the landing zone 227 and tape tab 217 is secured to the landing zone 229. Tape tabs 215 and 217 may each have the same construction as tape tab 219, if desired. As it can be seen, the fastening system permits repeated adjustments and repositioning of the tape tabs on the landing zones to achieve a desired fit without tearing the fabric of the diaper.

[0072] The second embodiment of the present invention defines of multi-layer tape tabs and landing zone shown in FIGS. 12-15 which is similar to the first embodiment illustrated in FIGS. 6-9 except for differences in the fastener 219 discussed below. As shown in FIG. 12 the T-shaped 200 comprise a chassis having opposed lateral segments or wing 209, 211. The construction of the diaper is otherwise the same as in FIG. 6. The fastener 219, however, consists of two layers of tapes 219A, 219C. Initially, the layer 219A is used to fasten the tape 219 to the diaper. In order to readjust the diaper, the layer 219C may be peeled off, leaving the layer 219A in place to act as a landing zone for readjustment of the diaper when necessary. After readjusting the diaper, the layer 219C is attached back onto layer 219A. Thus, the second fastening system requires less landing zone than the first embodiment while still realizing the advantage of repeated readjustment of the diaper and repositioning of the tape tab without tearing the diaper fabric. The use of multi-layer tape tab according to the second embodiment, with less landing zone area, results in increased flexibility of the wing portion of the diaper, and permits the use of elasticized wings when desired, all resulting in decreased manufacturing cost of the diaper. The construction of tape tabs 215, 217 may be similar to tape tab 219.

[0073] The third embodiment of the present invention employs hook and loop fastening system as illustrated in FIGS. 16-19. This fastening system is similar to the first fastening system described in connection with FIGS. 6-9

except that the landing zones 227 and 229 is covered with loop material rather than a silicone compound and the top surface of the tape portion 219A is covered with a hook material which covers the pressure sensitive adhesive. Thus, the release tab 223 covers the adhesive area that is not covered by the hook material. Referring to FIGS. 16-19, it can be seen that the configuration and construction of the T-shaped diaper of FIG. 16 is the same as in FIG. 6. Instead of being covered by a pressure sensitive adhesive as in FIG. 7, the portion 219A is covered with layer of hook material H, e.g., Velcro®. A grip strip 225 facilitates gripping the end of the tape 219 when peeling the fastener.

[0074] In use, the diaper wings are wrapped as hereinbefore described, the grip strip 225 is gripped to peel the tape 219 away and expose the hook surface H and then attaching (engaging) the hook surface H onto the loop-landing zone 229 on the wing. The intersecting portion 213 is then passed under the crotch, folded thereover and the tabs 215, 217 are secured to the landing zones 227, 229, respectively. Again the construction of tape tabs 215, 217 may be identical to tape tabs 219 in FIGS. 6, 12 and 16.

[0075] Referring to FIGS. 20-23 the fourth embodiment of the present invention is similar to the second embodiment except that the tape 219 consists of two superposed layers; a layer 219D having a top adhesive surface 219E and an opposed bottom surface 219F covered with loop material. Superposed on the tape 219D is the layer 219G which is covered with hook material H, the same as layer 219A in FIG. 18. Again tape tabs 215 and 217 may be identical to tape tab 219.

[0076] FIG. 24 illustrates a diaper, in semi-assembled position, incorporating the fastening system described in the second and fourth embodiment of the present invention. In FIG. 24, the tabs 215, 217 are shown in open position after use of the diaper in order to further illustrate the fastening system. As it can be seen from this figure, after the diaper has been worn and the insert piece 213 has been removed to disassemble the diaper, there remains on the wings 227 and 229, the layers 219D as described in connection with FIG. 22.

[0077] From the foregoing detailed description it is evident that several changes and modifications may be made in the different fastening systems which are obvious from, and are suggested by the description herein. It must also be noted that the nature of the different layers, the hook and loop materials and the adhesives used are well known in the art and are mentioned in the prior art patents discussed in this application as well as the earlier related patent applications.

[0078] Referring to FIGS. 25-27, the diaper shown therein has elasticated portions E attached to the wings, the mid-waist section and the distal end of the insert 213 or vertical intersecting portion. The elastic material may be any of the known elastic materials used in the art. This inclusion of elastics in the aforementioned diaper portion adds to stretchability of the wings and the diaper for improved fit and comfort. Also, the wings dimension, i.e., length L and width W can vary depending on the desired size. The diaper wings are usually made from spunbond, spunbond and meltblown, thermally or chemically bonded, hydrogenated nonwoven, composites made of film and nonwoven laminates and composites made of nonwoven/film/nonwoven. The film may be elastic and the nonwoven may have 50 to 200

percent elongation capability. If desired, the composite may be apertured in order to further improve its stretchability. The wings may be added as separate pieces on each side of the chassis insert, or they can be formed as extension of the insert.

[0079] The insert 213 used in the diaper consists of a fluid permeable coversheet, a fluid impermeable backsheet and an absorbent pad sandwiched therebetween. The absorbent pad may be made of a superabsorbent polymer (SAP) of the type used in the art and wood pulp fibers having the desired density. The ratio of SAP to wood pulp may be varied over a wide range. If desired, a layer or multilayer of drylaid type material can be used as the absorbent pad, such as Rayonier Novathin 2250355 or 3400355 available from Rayonier. The front and backwaist of the insert may be elasticized by attaching elastic web between the coversheet and the backsheet of the insert front and waist area similar to the wings.

[0080] FIG. 28 illustrates an embodiment similar to the embodiment of the invention illustrated by FIG. 16. However, the embodiment shown in FIG. 28, the distal end of the vertical insert piece has lateral segments or wings 309, 311. Male fastener 313, 315 are located at or near the lateral ends of each of the wings 309, 311.

[0081] In the diaper shown in FIG. 29, one wing has a male fastener as in FIG. 20 and the opposed lateral wing 211 has a female fastener 220. In addition, a female fastener 227, 229 are attached each on the back of each wing (the side away from the skin of the wearer).

[0082] In the diaper shown in FIG. 34, female fasteners 227, 229 are attached to the back surface of the diaper wings 209, 211. The tape tabs 215, 217 and 219 differ from the tape tabs shown in FIGS. 6-9 in that the permanent portion 219B is eliminated in order to reduce the cost of the product (see FIG. 35, a sectional view taken along its line 35-35 of FIG. 34).

[0083] In order to facilitate manufacturing and packaging the diaper, and as shown in FIG. 36, each of the lateral segments or wing 209, 211 is folded upon itself toward the center of the chassis. The facing surfaces of each wing may be attached removably by a suitable adhesive, ultrasonically or by some other attachment means as indicated by dotted circles C1, C2, C3 and C4. As it can be seen from FIG. 36, each wing 209, 211 also cover the insert cover sheet and is similarly attached as shown by the dotted circles C5, C6, C7 and C8. After unpacking, and in order to use the diaper, the finger lift portion 209A, 211A on each wing may be gripped between the thumb and the forefinger and the wing is lifted to an open position.

[0084] While in FIG. 36 each wing is shown folded once upon itself, as a practical matter, each wing may be folded more than once, if desired.

[0085] FIG. 37 shows the composition of the chassis beneath the wings 209, 211 comprising a layer of nonwoven (insert coversheet) 214 and a film backing (insert backsheet) 216.

[0086] In order to further enhance the functions of and the fitness-to-wear the diaper, attention should be focused on certain relative dimensions and locations of the diaper parts as well as several other features. These dimensions, locations and features are best appreciated by reference to FIG.

38. Both landing zones 427 and 429 are perforated in order to facilitate breathability of the diaper. Additionally, each wing segment is made of a material, such as nonwoven, that is permeable to moisture, vapor and oxygen. The length of each landing zone is preferably equal or less than the length of the respective lateral segment on which the landing zone is located. Additionally, the width of one of the landing zones is about equal or greater than the width of the other landing zone. The landing zone on the left and right lateral segments are conveniently made at least 1 inch wide and at least about 1 inch long. Additional dimensional considerations of the landing zones play significant role in the design of a functionally effective and desirable diaper. For example, the landing zone 427 on the left lateral segment is about 8 to about 15 inches wide and about 1 to about 7 inches long and the landing zone 427 on the right lateral segment is about 10 to about 20 inches wide and about 1 to about 7 inches long. The distance U between the outer edge of the left landing zone and the outer edge of the left lateral segment is about 6 to about 11 inches long, and the distance V between the outer edge of the right landing zone and the outer edge of the right segment is from 0 to about 13 inches.

[0087] Each of the landing zones may comprise a visible indicator zone which may be in the general form of a band of about 1 to about 7 inches long generally centrally disposed on the landing zone. Each of the tape tabs can be adhered to said band in the correct diaper processing (wearing) order.

[0088] The aforementioned diapering order described herein is by way of suggestion and not intended to limit the manner which the diaper may be applied to or worn by a person. Otherwise, obvious procedures are suggested to one skilled in the art by slight and obvious modifications which are nevertheless within the scope of the present invention.

[0089] Referring again to FIGS. 38 and 39, the diaper also comprises an insert 413 as well as side cuffs 414, front waist cuffs 416, back waist cuffs 418 and elastic waists 420, 421. The construction, dimensions and relative location of these components are also important consideration in the design of a functionally effective diaper. The construction of these cuffs may be the same as conventional cuffs of the prior art diaper, but preferably these barrier cuffs are made of a layer of nonwoven similar to the diaper coversheet or a composite made from a nonwoven and a polyethylene film.

[0090] For increased fitness of the diaper, it is desirable that the center of the waistband bear a defined relationship to the center of the tape tabs. Thus, optimum fitness can be achieved when a line drawn through the center of the waistband coincides with the line drawn through the center of each tape tab 415 or 417, or when the distance between these center lines is between about 0 and 3 inches.

[0091] The length E of the absorbent core 412 is preferably about 30 to 80 percent of the overall width B of the diaper, with the absorbent core 412 being located about 1.5 inches from the front edge 413A of insert 413. Also, the front insert width A' is equal to or greater than the width A" of the back insert, and the front insert width A' is equal to or less than the overall width B of the diaper.

[0092] In order to make the diaper user friendly each of the two tape tabs 415, 417 attached to the insert 413 has a numerical indicia such as the number 2 on the left side and

the number 3 on the right side, or vice versa. In addition, the tapes on the ear segment and the tapes on the insert are also provided with numerical indicia such as the number 1. These digits indicate and facilitate the diapering process. More than one of each indicia may be printed on each tab to assure that at least one indicia on each tab remains visible during the application of the diaper.

[0093] Regarding the width of the diaper, it is preferable that the relaxed width of the diaper (in its normal unstretched position) be between about 20 to about 100 percent of the width B of the diaper in its fully stretched position. This assures tight fit of the diaper to the torso of the wearer.

[0094] The dimensions of the second portion of the diaper are also significant design considerations. Thus, the second portion has a front width A' which is at least about 10 inches, preferably about 15 to about 25 inches, and the width A' is equal or less than the width A" of the back of said second portion. Moreover, the length A of the second portion is about equal or less than the overall width B of the chassis.

[0095] Each of the lateral segments of the absorbent article is desirably from about 2 to about 15 inches long and from about 10 to about 30 inches wide.

[0096] The width A' of the insert 413 is from about 8 to about 40 percent of said width when fully stretched and the relaxed width A of said second portion is from about 10 to about 100 percent of said width when fully stretched.

[0097] The materials used for making the diaper are generally well known in the art and are described in the aforementioned parent applications and the prior art patents cited therein. In this connection, the length E of the absorbent core or layer is about 20 to about 40 inches and contains up to about 60 weight percent superabsorbent polymer (SAP) and up to about 40 weight percent by weight of hydrophilic fibers of the type known and described in the prior art.

[0098] Additional design modifications further enhance the effective use of the diaper. Thus, referring to FIG. 29, when wearing the diaper, tape tab 219 may be fastened to the tape tab 215, and tape tab 220 may be fastened to tape tab 217. Also, while FIG. 28 shows that the diaper is provided with front wings or segments 209, 211, if desired, the diaper may be provided with rear segments as well (not shown). Additionally, and referring to FIGS. 25, 26 and 27, while the diaper is shown with one elastic zone, it may be provided with more than one elastic zone, preferably three elastic zones. Furthermore, referring to FIG. 35, the crotch cuffs may be folded inwardly or outwardly and secured together by a suitable adhesive, approximately 2 inches from each corner.

[0099] The foregoing description of the relative dimensions and other features of the diaper are significant in the manufacture of a commercially acceptable and functionally effective diaper. Other changes and modifications become obvious from the description herein.

1. A disposable absorbent article having a chassis comprising two portions which together define a generally T-shaped configuration when said chassis is viewed in stretched position; a first portion having opposed lateral segments adapted to be wrapped around the waist of a wearer of said article, a second portion having a distal end

and a proximal end disposed generally vertically relative to said first portion and adapted to be passed under the crotch of the wearer and folded upwardly and over said overlapped portions;

one male fastening means on one of said lateral segments, and at least one female fastening means on said other lateral segment, such that when said lateral segments overlap each other said male fastening means engages said female fastening means;

a pair of opposed spaced apart male fastening means at the distal end of said second portion, and a pair of spaced apart opposed female fastening means at said first portion such that when said lateral segments are wrapped around the waist of a wearer and said second portion is folded over said segments, each of said pair of male fastening means engage a correspondingly aligned one of said pair of female fastening means,

wherein said absorbent article has a relaxed width (B) between about 20 to about 100 percent of the width of said absorbent article when fully stretched.

2. An absorbent article as in claim 1 wherein said second portion has a top surface and a rear surface and wherein said fastening means at the distal end of said second portion are located on the top surface thereof.

3. An absorbent article as in claim 1 or 2 wherein each of said lateral segments comprises at least one landing zone made of a material that is permeable to moisture, vapor and oxygen.

4. An absorbent article as in claim 1 or 2 wherein each of said lateral segments comprises a perforated landing zone.

5. An absorbent article as in claim 3 or 4 wherein the length of each of said landing zones is equal to or less than the length of the respective lateral segment on which said landing zone is located.

6. An absorbent article as in claim 3 or 4 wherein the width of one of said landing zones is equal to or greater than the width of the other landing zone.

7. An absorbent article as in claim 3 wherein said opposed lateral segments comprise a left segment and a right segment, and wherein the landing zone on said left and right segments have widths at least about 1 inch and lengths of at least 1 inch.

8. An absorbent article as in claim 4 wherein said opposed lateral segments comprise a left segment and a right segment, and wherein the landing zone on said left segment has width of from about 8 to about 15 inches and a length of about 1 to about 7 inches, and wherein the landing zone on said right segment has a width of from about 10 to about 20 inches and a length of from about 1 to about 7 inches.

9. An absorbent article as in claim 7 wherein the width of the left landing zone is about 8.25 inches to about 15 inches and the distance between the outer edge of said left landing zone and left ear segment is about 6 to about 11 inches, and the distance between the outer edge of said right landing zone and the outer edge of said right segment is from about 0 to about 13 inches.

10. An absorbent article as in claim 8 wherein the width of the left landing zone is about 8.25 inches to about 15 inches and the distance between the outer edge of said left landing zone and left ear segment is about 6 to about 11 inches, and the distance between the outer edge of said right landing zone and the outer edge of said right segment is from about 0 to about 13 inches.

11. An elastic absorbent article as in claim 3 further including elastic waistband wherein said elastic waistband has a centerline which coincides with a line drawn through the center of said landing zone.

12. An elastic absorbent article as in claim 4 further including elastic waistband wherein said elastic waistband has a centerline which coincides with a line drawn through the center of said landing zone.

13. An elastic absorbent article as in claim 11 wherein the distance between the line drawn between the center line of each of said landing zone and the line drawn through the center of said elastic waistband is about 0 to about 3 inches.

14. An elastic absorbent article as in claim 12 wherein the distance between the line drawn between the center line of each of said landing zone and the line drawn through the center of said elastic waist band is about 0 to about 3 inches.

15. An absorbent article as in claim 1 wherein each of said male tape tabs is provided with at least one numerical indicia, with tape tab on one of the lateral segments being provided with the numeral 1, and the tape tabs on the insert being provided with the numerals 2 and 3, thereby defining the order of wearing the article.

16. An absorbent article as in claim 2 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

17. An absorbent article as in claim 3 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

18. An absorbent article as in claim 4 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

19. An absorbent article as in claim 5 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

20. An absorbent article as in claim 6 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

21. An absorbent article as in claim 7 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

22. An absorbent article as in claim 8 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

23. An absorbent article as in claim 9 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

24. An absorbent article as in claim 10 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

25. An absorbent article as in claim 11 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

26. An absorbent article as in claim 12 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

27. An absorbent article as in claim 13 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

28. An absorbent article as in claim 14 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

29. An absorbent article as in claim 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 or 28 wherein each of said landing zones comprises a visible indicator zone in the general form of a band of about 1 to about 7 inches in length generally centrally disposed on said landing zone such that each of said male tape tabs can be adhered to said band in the numerical order designated on each of said tabs for the order of wearing said article.

30. An absorbent article as in claim 29 wherein said visible indicator zone contains a pigment.

31. An absorbent article as in claim 30 wherein said pigment is photo, infrared or ultraviolet light sensitive.

32. An absorbent article as in claim 1 wherein said second portion is generally contoured and comprises a coversheet, a backsheet and an absorbent core layer disposed between said coversheet and said backsheet, wherein said second portion has a front width A' of from about 16 to about 25 inches, and said absorbent core layer having a length E of from about 20 to about 40 inches and contains up to about 60 percent by weight superabsorbent polymer (SAP) and up to 40 percent by weight hydrophilic fibers.

33. An absorbent article as in claim 1 wherein the front width A' of said second portion is about equal to or less than the width A" of the back width.

34. An absorbent article as in claim 1 wherein the width A' of said second portion is about equal or greater than 15 inches.

35. An absorbent article as in claim 1 wherein the length A of said second portion is about equal to or less than the overall width B of said chassis.

36. An absorbent article as in claim 1 wherein each of the lateral segments of said first portion is from about 2 to about 15 inches long and from about 10 to about 30 inches wide.

37. An absorbent article as in claim 1 further comprising waist cuffs and sides barrier cuff.

38. An absorbent article as in claim 1 wherein the width A' of said insert is from about 20 to about 100 percent of said width when fully stretched.

39. An absorbent article as in claim 1 wherein the relaxed width A of said second portion is from about 10 to about 100 percent of said width when fully stretched.

40. An elasticated absorbent article having a chassis comprising two portions which together define a generally T-shaped configuration when said chassis is viewed in stretched position; a first portion having a female surface, and a second portion disposed generally vertically relative to said first portion and adapted to be passed under the crotch of the wearer and folded upwardly and over said first portion.

said first portion having opposed lateral segments adapted to be wrapped around the torso of the wearer,

at least one male fastening means on one of said lateral segments,

at least one male fastening means at the distal end of said second portion,

such that when said lateral segments are in overlapped position and said second portion is folded over said overlapped portions, said male fastening means engages said female surface of said first portion,

wherein said absorbent article has a relaxed width (B) between 20 to about 100 percent of the width of said absorbent article when fully stretched.

41. An absorbent article as in claim 40 wherein said second portion has a top surface and a rear surface and wherein said fastening means at the distal end of said second portion are located on the top surface thereof.

42. An absorbent article as in claim 40 or 41 wherein each of said lateral segments comprises at least one landing zone made of a material that is permeable to moisture, vapor and oxygen.

43. An absorbent article as in claim 40 or 41 wherein each of said lateral segments comprises a perforated landing zone.

44. An absorbent article as in claim 42 or 43 wherein the length of each of said landing zones is equal to or less than the length of the respective lateral segment on which said landing zone is located.

45. An absorbent article as in claim 42 or 43 wherein the width of one of said landing zones is equal to or greater than the width of the other landing zone.

46. An absorbent article as in claim 42 wherein said opposed lateral segments comprise a left segment and a right segment, and wherein the landing zone on said left and right segments have widths at least about 1 inch and lengths of at least 1 inch.

47. An absorbent article as in claim 43 wherein said opposed lateral segments comprise a left segment and a right segment, and wherein the landing zone on said left segment has width of from about 8 to about 15 inches and a length of about 1 to about 7 inches, and wherein the landing zone

on said right segment has a width of from about 10 to about 20 inches and a length of from about 1 to about 7 inches.

48. An absorbent article as in claim 46 wherein the width of the left landing zone is about 8.25 inches to about 15 inches and the distance between the outer edge of said left landing zone and left ear segment is about 6 to about 11 inches, and the distance between the outer edge of said right landing zone and the outer edge of said right segment is from about 0 to about 13 inches.

49. An absorbent article as in claim 47 wherein the width of the left landing zone is about 8.25 inches to about 15 inches and the distance between the outer edge of said left landing zone and left ear segment is about 6 to about 11 inches, and the distance between the outer edge of said right landing zone and the outer edge of said right segment is from about 0 to about 13 inches.

50. An elastic absorbent article as in claim 42 further including elastic waistband wherein said elastic waistband has a centerline which coincides with a line drawn through the center of said landing zone.

51. An elastic absorbent article as in claim 43 further including elastic waistband wherein said elastic waistband has a centerline which coincides with a line drawn through the center of said landing zone.

52. An elastic absorbent article as in claim 50 wherein the distance between the line drawn between the center line of each of said landing zone and the line drawn through the center of said elastic waistband is about 0 to about 3 inches.

53. An elastic absorbent article as in claim 51 wherein the distance between the line drawn between the center line of each of said landing zone and the line drawn through the center of said elastic waist band is about 0 to about 3 inches.

54. An absorbent article as in claim 40 wherein each of said tape tabs is provided with at least one numerical indicia, with tape tab on one of the lateral segments being provided with the numeral 1, and the tape tabs on the insert being provided with the numerals 2 and 3, thereby defining the order of wearing the article.

55. An absorbent article as in claim 41 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

56. An absorbent article as in claim 42 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

57. An absorbent article as in claim 43 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

58. An absorbent article as in claim 44 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

59. An absorbent article as in claim 45 wherein each of said male tape tabs is provided with at least one numerical

indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

60. An absorbent article as in claim 46 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

61. An absorbent article as in claim 47 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

62. An absorbent article as in claim 48 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

63. An absorbent article as in claim 49 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

64. An absorbent article as in claim 50 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

65. An absorbent article as in claim 51 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

66. An absorbent article as in claim 52 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

67. An absorbent article as in claim 53 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

68. An absorbent article as in claim 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66 or 67 wherein each of said landing zones comprises a visible indicator zone in the general form of a band of about 1 to about 7 inches in length generally centrally disposed on said landing zone such that each of said male tape tabs can be adhered to said band in the numerical order designated on each of said tabs for the order of wearing said article.

69. An absorbent article as in claim 68 wherein said visible indicator zone contains a pigment.

70. An absorbent article as in claim 69 wherein said pigment is photo, infrared or ultraviolet light sensitive.

71. An absorbent article as in claim 40 wherein said second portion is generally contoured and comprises a coversheet, a backsheet and an absorbent core layer disposed between said coversheet and said backsheet, wherein said second portion has a front width A' of from about 16 to about 25 inches, and said absorbent core layer having a length E of from about 20 to about 40 inches and contains up to about 60 percent by weight superabsorbent polymer (SAP) and up to 40 percent by weight hydrophilic fibers.

72. An absorbent article as in claim 40 wherein the front width A' of said second portion is about equal to or less than the width A" of the back width.

73. An absorbent article as in claim 40 wherein the width A' of said second portion is about equal or greater than 15 inches.

74. An absorbent article as in claim 40 wherein the length A of said second portion is about equal to or less than the overall width B of said chassis.

75. An absorbent article as in claim 40 wherein each of the lateral segments of said first portion is from about 2 to about 15 inches long and from about 10 to about 30 inches wide.

76. An absorbent article as in claim 40 further comprising waist cuffs and sides barrier cuff.

77. An absorbent article as in claim 40 wherein the width A' of said insert is from about 20 to about 100 percent of said width when fully stretched.

78. An absorbent article as in claim 40 wherein the relaxed width A of said second portion is from about 10 to about 100 percent of said width when fully stretched.

79. An elastic absorbent article having a chassis comprising two portions, a first waist portion and a second insert portion which together define a generally T-shaped configuration when said chassis is viewed in stretched position; said first waist portion having opposed lateral segments adapted to be wrapped around the waist of a wearer of said article, said second portion having a distal end having at least one tape tab, and a proximal end, disposed generally vertically relative to said first waist portion and adapted to be passed under the crotch of the wearer and folded upwardly and over said waist portion such that the tape tab at the distal end of said second portion is adhered to one of said lateral segments;

said chassis further comprising a tape tab disposed near the end of one of said lateral segments, said tape tab having a first portion for fastening said tape tab to said lateral segment, and a second portion permanently attached to a surface of said lateral segment away from the skin of the wearer of said diaper, said first portion having a top adhesive-covered surface and an opposed bottom backing sheet; a release tape having a top surface coated with a release compound and an opposed bottom adhesive surface wherein a portion of said release tape is attached to said first portion of said tape tab, and another portion of said release is adhered to a lateral segment of said diaper,

wherein said absorbent article has a relaxed width (B) between about 20 to about 90 percent of the width of said absorbent article when fully stretched.

80. An absorbent article as in claim 79 wherein said second portion has a top surface and a rear surface and

wherein said fastening means at the distal end of said second portion are located on the top surface thereof.

81. An absorbent article as in claim 79 or 80 wherein each of said lateral segments comprises at least one landing zone made of a material that is permeable to moisture, vapor and oxygen.

82. An absorbent article as in claim 79 or 80 wherein each of said lateral segments comprises a perforated landing zone.

83. An absorbent article as in claim 81 or 82 wherein the length of each of said landing zones is equal to or less than the length of the respective lateral segment on which said landing zone is located.

84. An absorbent article as in claim 81 or 82 wherein the width of one of said landing zones is equal to or greater than the width of the other landing zone.

85. An absorbent article as in claim 81 wherein said opposed lateral segments comprise a left segment and a right segment, and wherein the landing zone on said left and right segments have widths at least about 1 inch and lengths of at least 1 inch.

86. An absorbent article as in claim 4 wherein said opposed lateral segments comprise a left segment and a right segment, and wherein the landing zone on said left segment has width of from about 8 to about 15 inches and a length of about 1 to about 7 inches, and wherein the landing zone on said right segment has a width of from about 10 to about 20 inches and a length of from about 1 to about 7 inches.

87. An absorbent article as in claim 85 wherein the width of the left landing zone is about 8.25 inches to about 15 inches and the distance between the outer edge of said left landing zone and left ear segment is about 6 to about 11 inches, and the distance between the outer edge of said right landing zone and the outer edge of said right segment is from about 0 to about 13 inches.

88. An absorbent article as in claim 86 wherein the width of the left landing zone is about 8.25 inches to about 15 inches and the distance between the outer edge of said left landing zone and left ear segment is about 6 to about 11 inches, and the distance between the outer edge of said right landing zone and the outer edge of said right segment is from about 0 to about 13 inches.

89. An elastic absorbent article as in claim 81 further including elastic waistband wherein said elastic waistband has a centerline which coincides with a line drawn through the center of said landing zone.

90. An elastic absorbent article as in claim 82 further including elastic waistband wherein said elastic waistband has a centerline which coincides with a line drawn through the center of said landing zone.

91. An elastic absorbent article as in claim 89 wherein the distance between the line drawn between the center line of each of said landing zone and the line drawn through the center of said elastic waistband is about 0 to about 3 inches.

92. An elastic absorbent article as in claim 90 wherein the distance between the line drawn between the center line of each of said landing zone and the line drawn through the center of said elastic waist band is about 0 to about 3 inches.

93. An absorbent article as in claim 79 wherein each of said male tape tabs is provided with at least one numerical indicia, with tape tab on one of the lateral segments being provided with the numeral 1, and the tape tabs on the insert being provided with the numerals 2 and 3, thereby defining the order of wearing the article.

94. An absorbent article as in claim 80 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article

95. An absorbent article as in claim 81 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article

96. An absorbent article as in claim 82 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

97. An absorbent article as in claim 83 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

98. An absorbent article as in claim 84 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

99. An absorbent article as in claim 85 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

100. An absorbent article as in claim 86 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

101. An absorbent article as in claim 87 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

102. An absorbent article as in claim 88 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

103. An absorbent article as in claim 89 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

104. An absorbent article as in claim 90 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being

provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

105. An absorbent article as in claim 91 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

106. An absorbent article as in claim 92 wherein each of said male tape tabs is provided with at least one numerical indicia, with the tape tab on one of the lateral segments being provided with the numeral 1, and the tape tab on the insert are provided with the numeral 2 or 3 thereby defining the order of wearing the article.

107. An absorbent article as in claim 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106 or 107 wherein each of said landing zones comprises a visible indicator zone in the general form of a band of about 1 to about 7 inches in length generally centrally disposed on said landing zone such that each of said male tape tabs can be adhered to said band in the numerical order designated on each of said tabs for the order of wearing said article.

108. An absorbent article as in claim 107 wherein said visible indicator zone contains a pigment.

109. An absorbent article as in claim 108 wherein said pigment is photo, infrared or ultraviolet light sensitive.

110. An absorbent article as in claim 79 wherein said second portion is generally contoured and comprises a coversheet, a backsheet and an absorbent core layer disposed between said coversheet and said backsheet, wherein said second portion has a front width A' of from about 16 to about 25 inches, and said absorbent core layer having a length E of from about 20 to about 40 inches and contains up to about 60 percent by weight superabsorbent polymer (SAP) and up to 40 percent by weight hydrophilic fibers.

111. An absorbent article as in claim 79 wherein the front width A' of said second portion is about equal to or less than the width A" of the back width.

112. An absorbent article as in claim 79 wherein the width A' of said second portion is about equal or greater than 15 inches.

113. An absorbent article as in claim 79 wherein the length A of said second portion is about equal to or less than the overall width B of said chassis.

114. An absorbent article as in claim 79 wherein each of the lateral segments of said first portion is from about 2 to about 15 inches long and from about 10 to about 30 inches wide.

115. An absorbent article as in claim 79 further comprising waist cuffs and sides barrier cuff.

116. An absorbent article as in claim 79 wherein the width A' of said insert is from about 20 to about 100 percent of said width when fully stretched.

117. An absorbent article as in claim 79 wherein the relaxed width A of said second portion is from about 10 to about 100 percent of said width when fully stretched.

118. An absorbent article as in claim 1 wherein each tape tab located at the end of said lateral segments is fastened to the tape tab at the distal end of said second portion located at the same side as said tape tab on the lateral segment.

119. An absorbent article as in claim 1 wherein said first portion comprises a pair of opposed lateral segments on the front and rear of said first portion.

120. An absorbent article as in claim 1 wherein each of said lateral segments comprises at least three elastic zones.

121. An absorbent article as in claim 1 wherein said article comprises inwardly folded crotch cuffs secured together adhesively.

122. An absorbent article as in claim 1 wherein said article comprises outwardly folded crotch cuffs secured together adhesively.

123. An absorbent article as in claim 40 wherein each tape tab located at the end of said lateral segments is fastened to the tape tab at the distal end of said second portion located at the same side as said tape tab on the lateral segment.

124. An absorbent article as in claim 40 wherein said first portion comprises a pair of opposed lateral segments on the front and rear of said first portion.

125. An absorbent article as in claim 40 wherein each of said lateral segments comprises at least three elastic zones.

126. An absorbent article as in claim 40 wherein said article comprises inwardly folded crotch cuffs secured together adhesively.

127. An absorbent article as in claim 40 wherein said article comprises outwardly folded crotch cuffs secured together adhesively.

128. An absorbent article as in claim 79 wherein each tape tab located at the end of said lateral segments is fastened to the tape tab at the distal end of said second portion located at the same side as said tape tab on the lateral segment.

129. An absorbent article as in claim 79 wherein said first portion comprises a pair of opposed lateral segments on the front and rear of said first portion.

130. An absorbent article as in claim 79 wherein each of said lateral segments comprises at least three elastic zones.

131. An absorbent article as in claim 79 wherein said article comprises inwardly folded crotch cuffs secured together adhesively.

132. An absorbent article as in claim 79 wherein said article comprises outwardly folded crotch cuffs secured together adhesively.

133. A disposable absorbent article having a chassis formed of two portions, a first portion and a second portion which together define a generally T-shaped configuration when said chassis is viewed in stretched position; said first portion having opposed lateral segments adapted to be wrapped around the waist of a wearer of said article and overlap each other, each said lateral segment having an outer edge and a nonwoven outer surface portion, and said second portion having a distal end with longitudinal sides and a proximal end disposed generally vertically relative to said first portion and adapted to be passed under the crotch of the wearer and folded upwardly and over said overlapped portions;

said article having only three male fastening means, each said male fastening means defining hook-like mini-projections for engagement with said nonwoven outer surface portions of said lateral segments, as follows:

(i) one male fastening means on an inner surface of one of said lateral segments adjacent said outer edge thereof, such that, when said lateral segments overlap each other, said male fastening means engages an outer surface portion of said other lateral segment; and

(ii) a pair of opposed spaced apart male fastening means on an inner surface of said distal end of said second portion, each adjacent a respective one of said longitudinal sides thereof, such that, when said lateral segments are wrapped around the waist of a wearer and said second portion is folded over said lateral segments, each one of said pair of male fastening means engages a correspondingly aligned outer surface portion of a respective lateral segment;

each of said lateral segments being laterally folded over on itself at least once, with at least a pair of facing surfaces thereof releasably secured together, prior to use thereof.

ABSTRACT

A disposable absorbent article such as, e.g., a T-shaped diaper comprising two portions, a lateral portion (backwaist) having two lateral segments or wings for wrapping around the waist of a wearer of the diaper, and a second vertical portion or insert which is adapted to be passed under the crotch of the wearer and folded thereover. A uniquely designed tape tab located at the outer lateral end of one wing assures more perfect and comfortable fit. Tape tabs are also provided at the distal ends of vertical portion for engagement onto landing zones disposed on the surface of each wing. These tape tabs may have the same general construction as the tape tab on the diaper wing. The dimensions of the diaper and several of its components and the relative locations of these components are important factors which contribute to improved fitness and functions of the diaper.

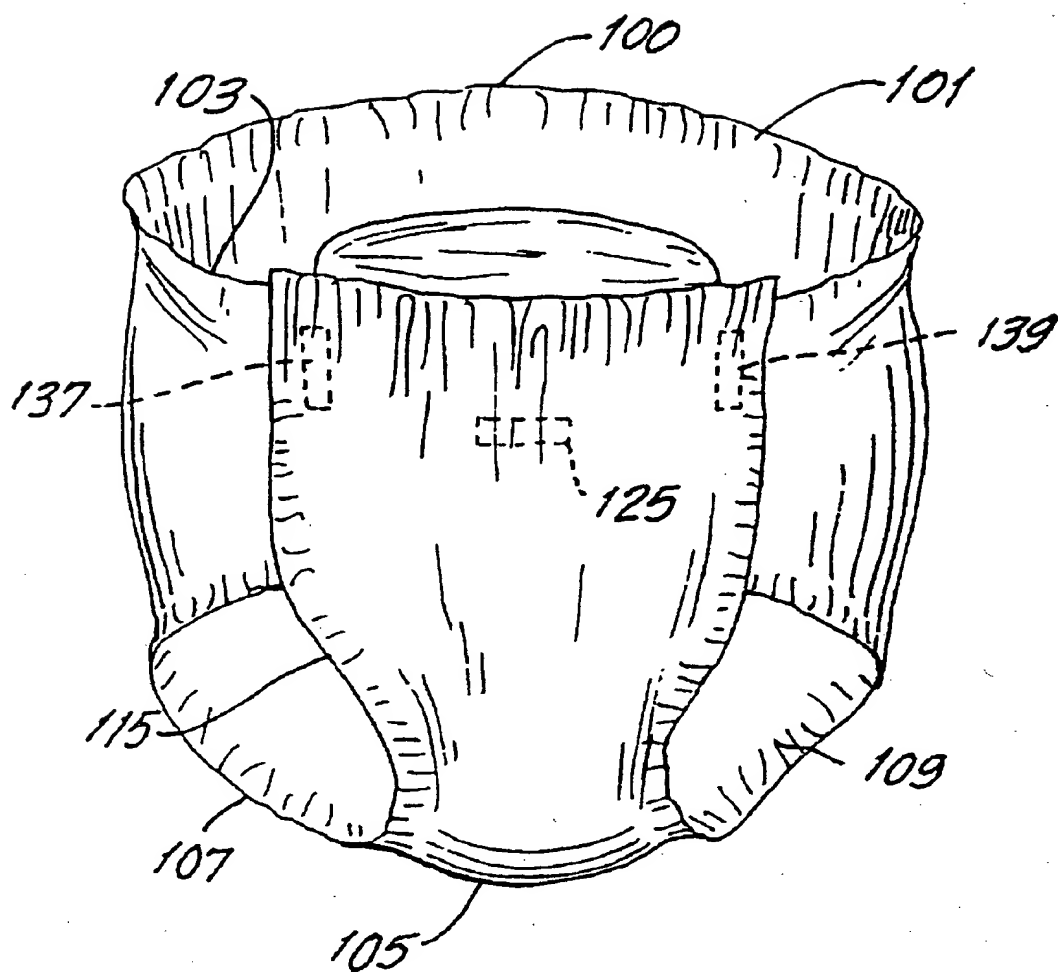


FIG.1

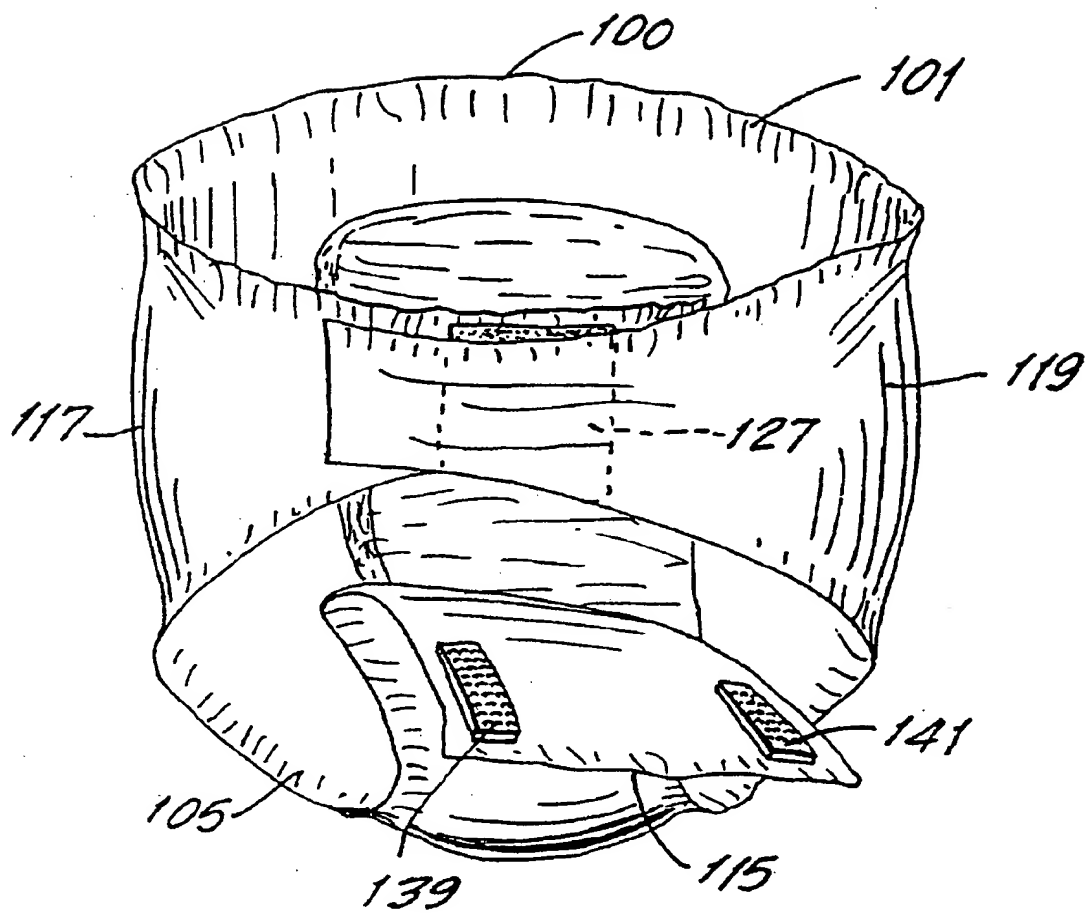


FIG.2

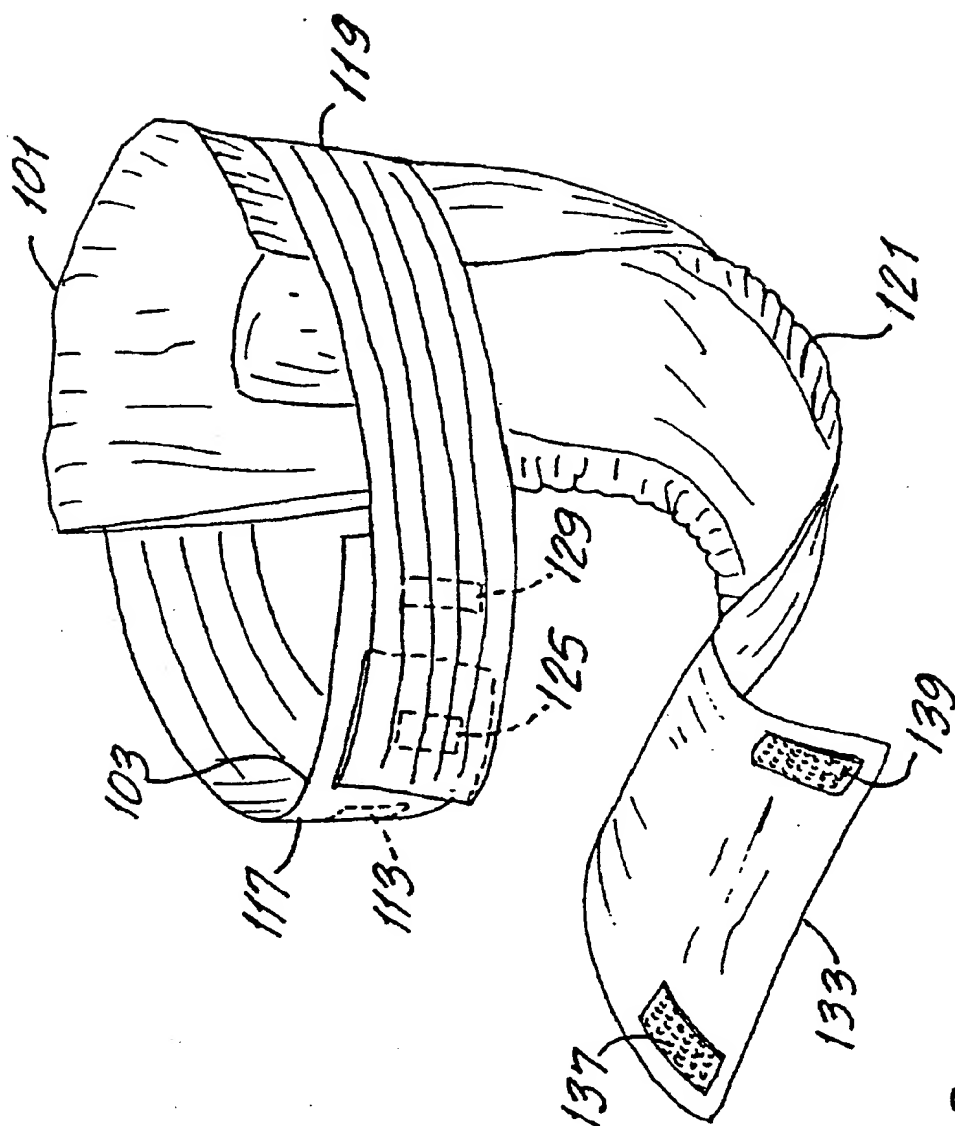
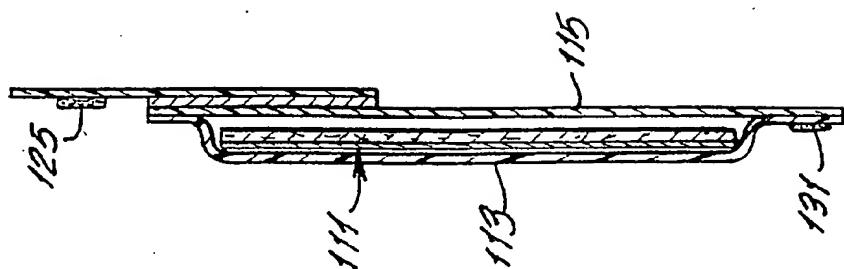
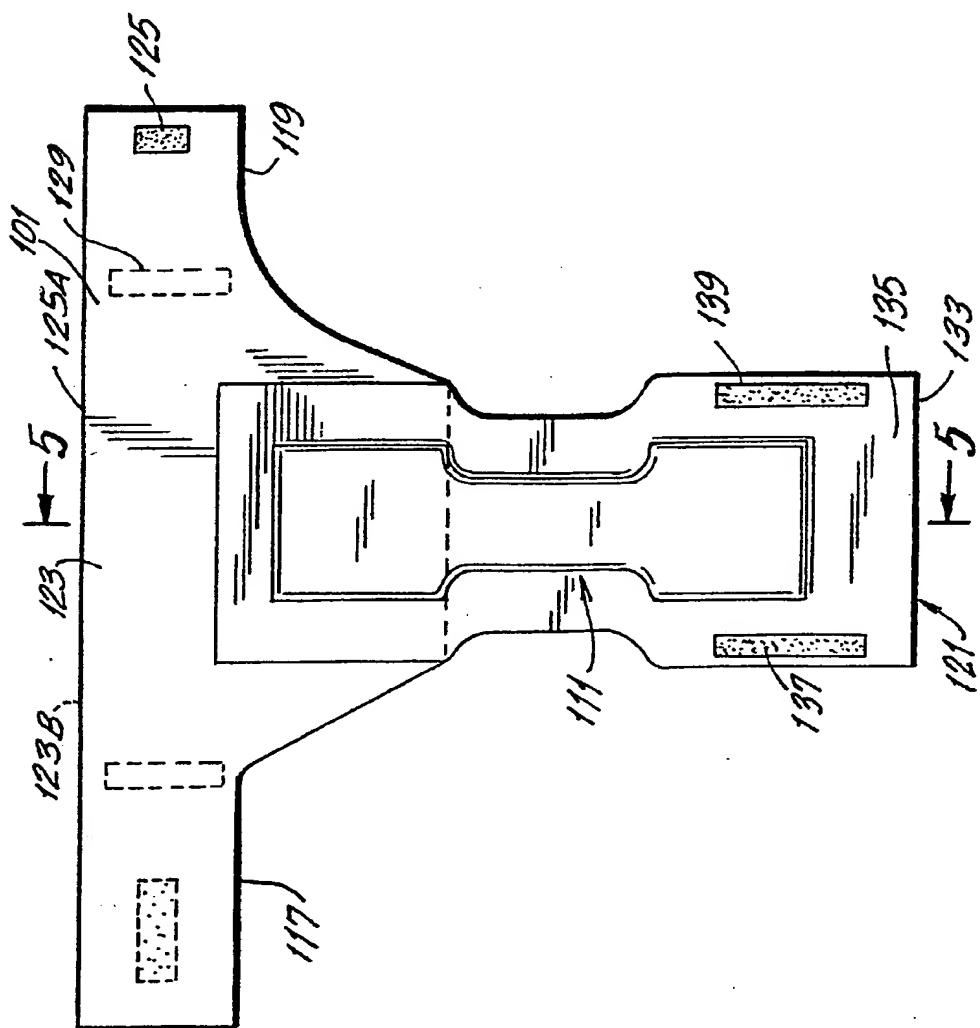
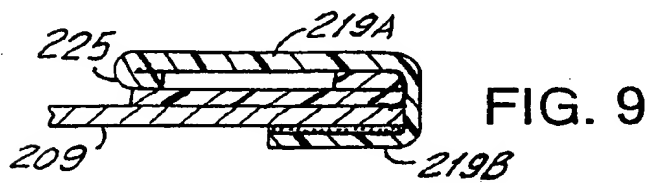
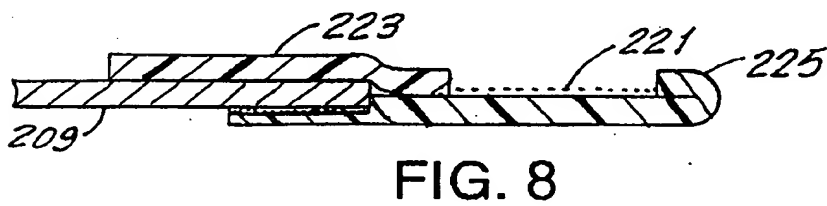
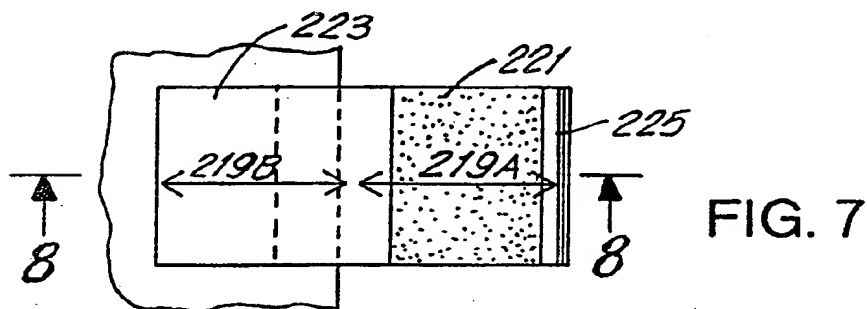
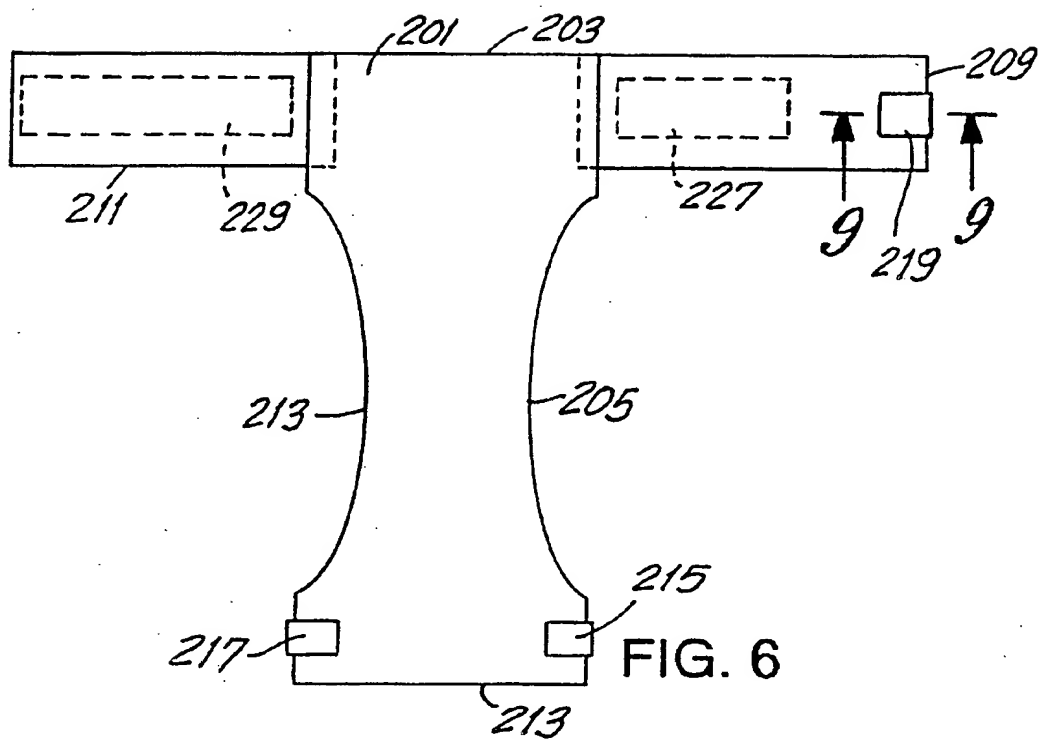


FIG.3





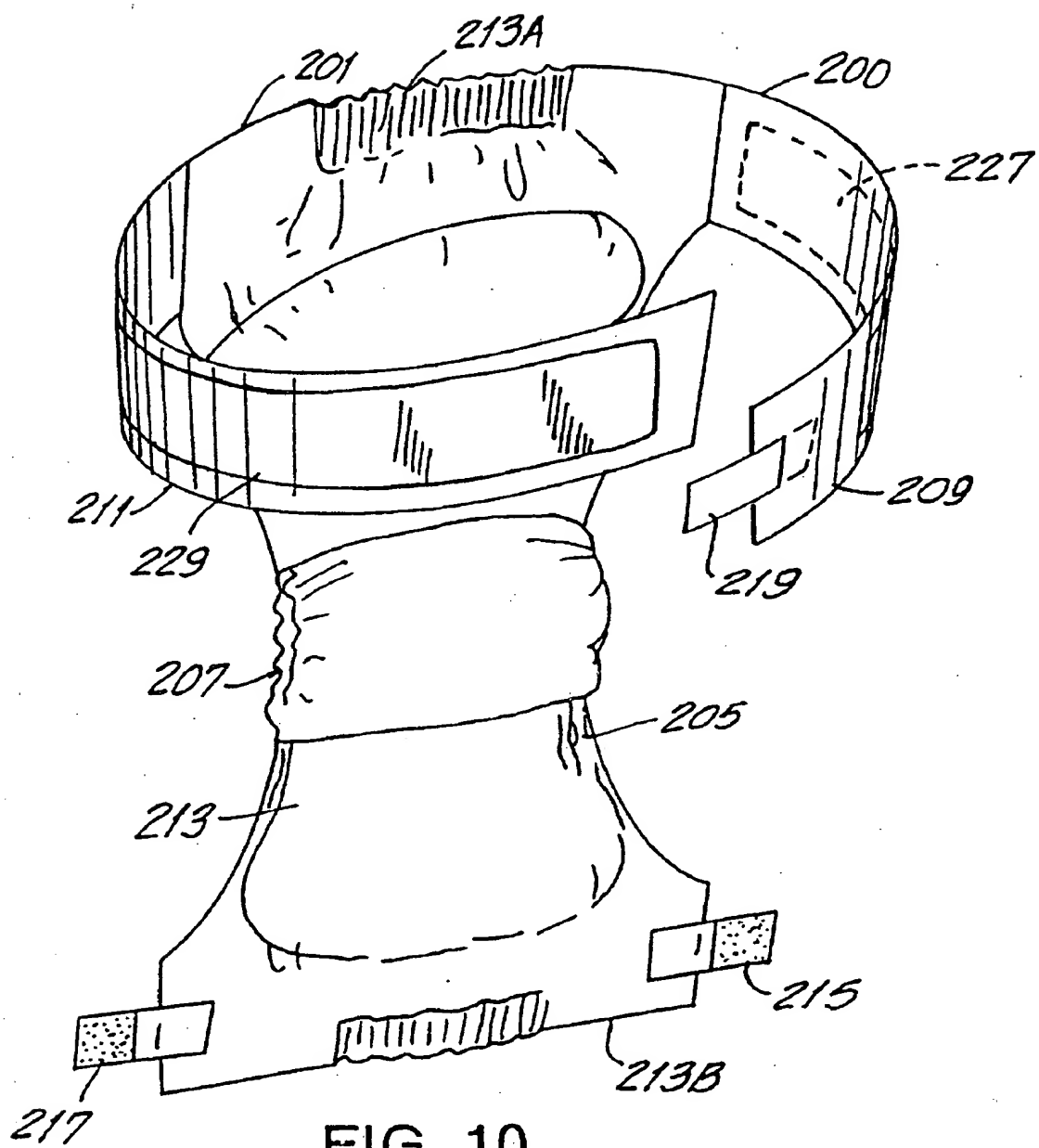


FIG. 10

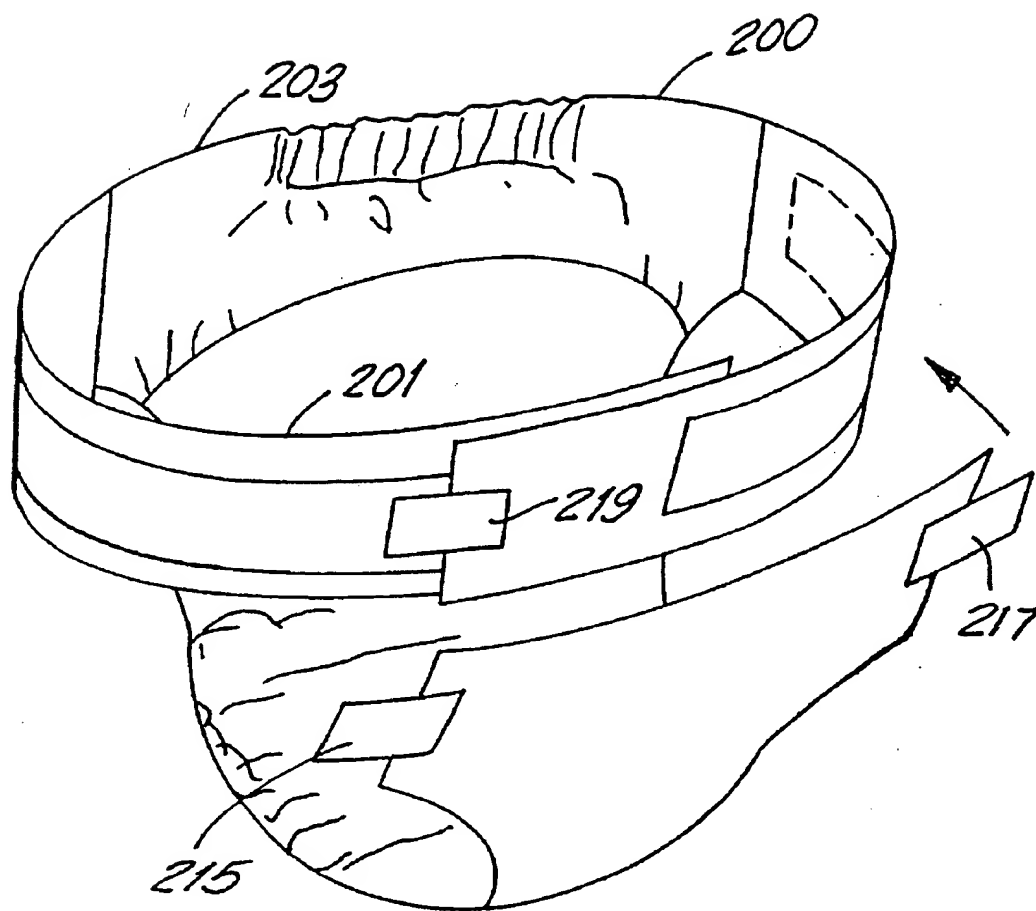
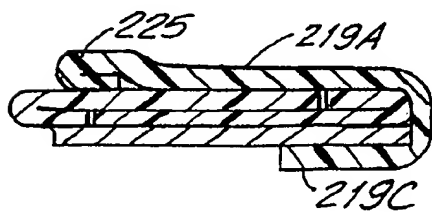
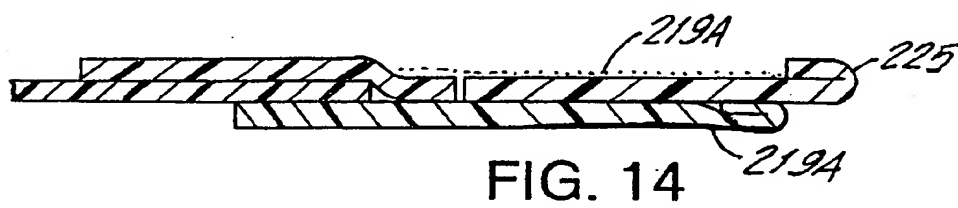
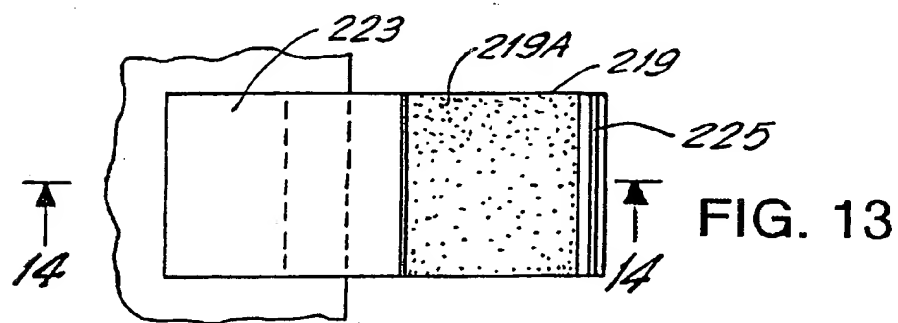
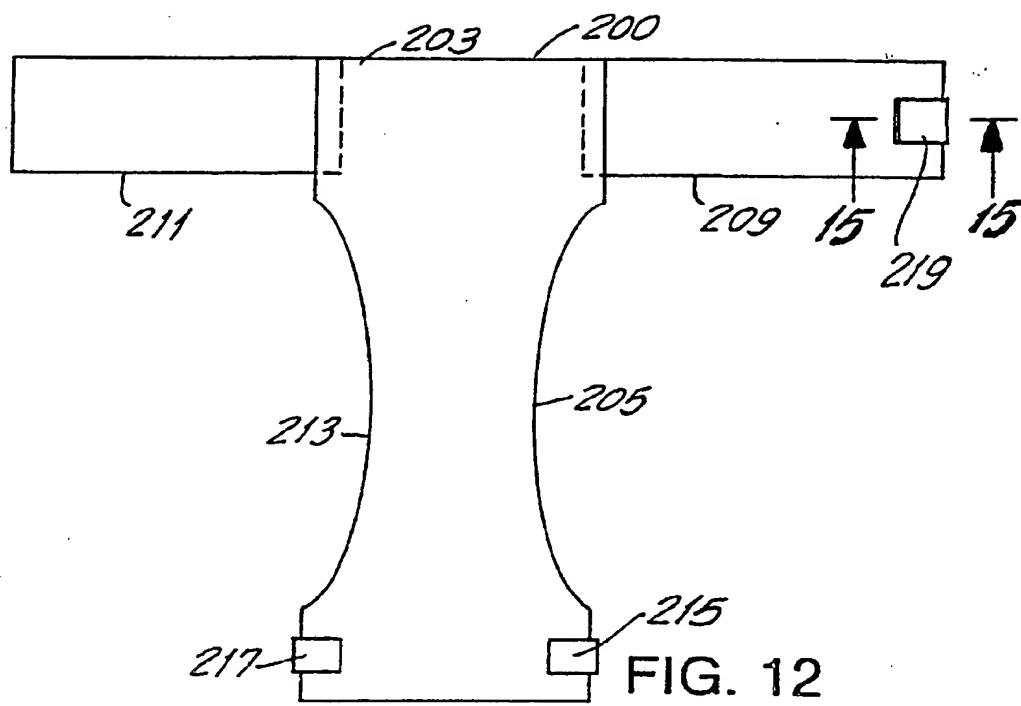
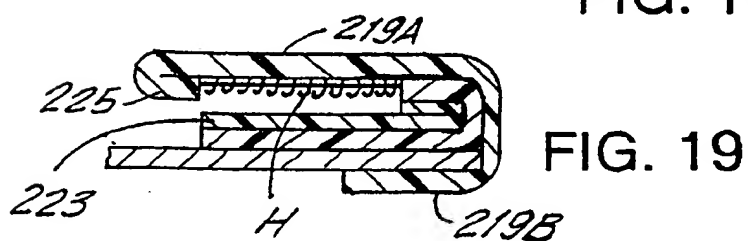
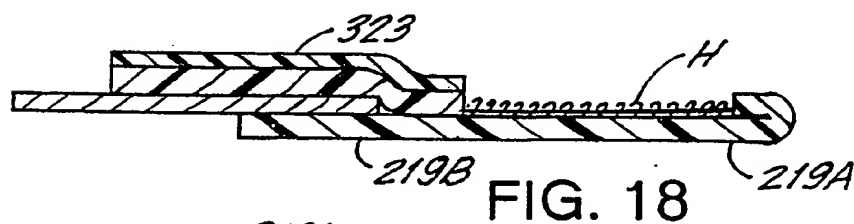
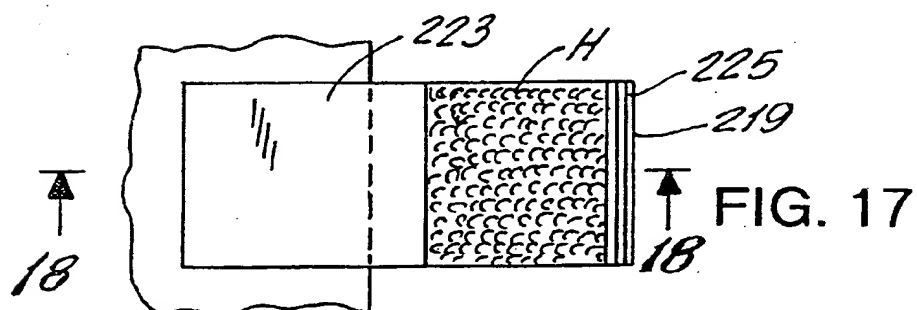
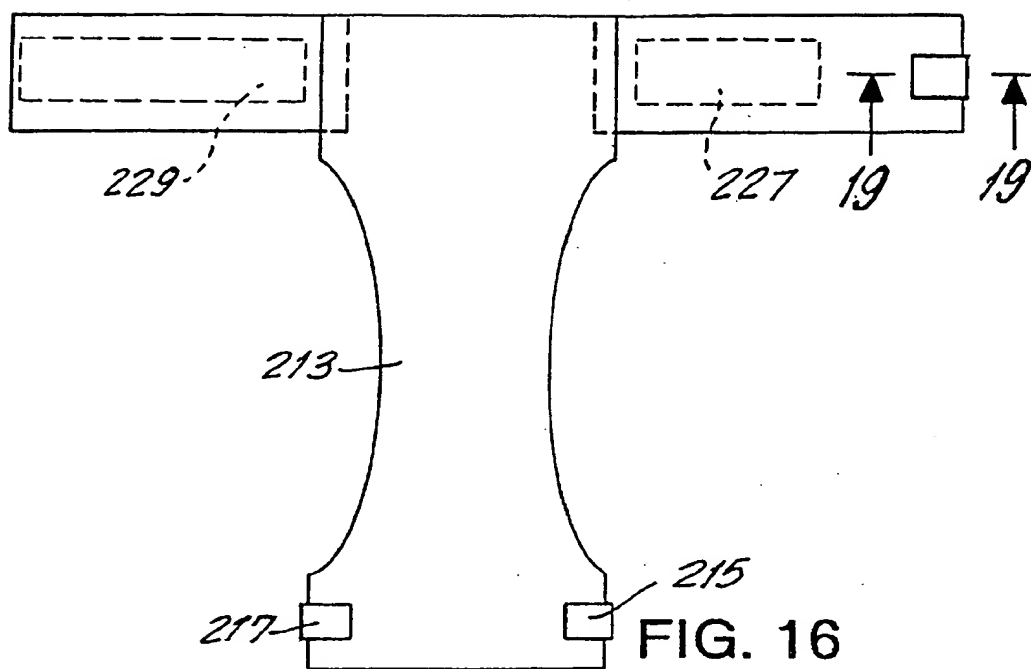
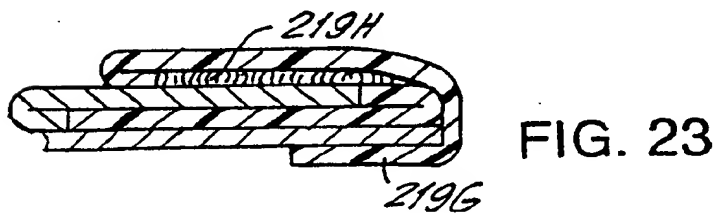
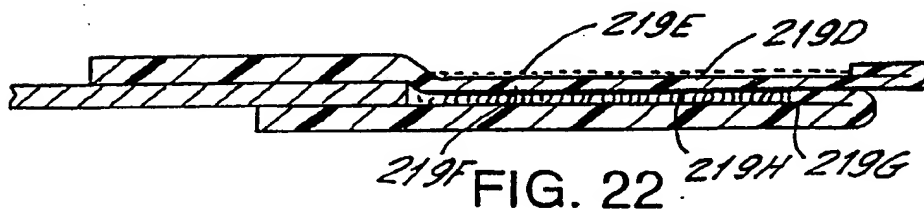
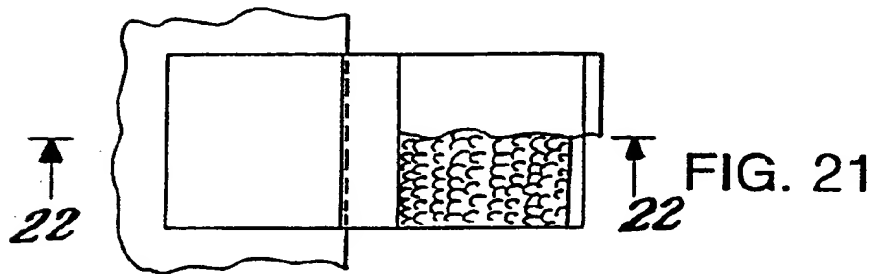
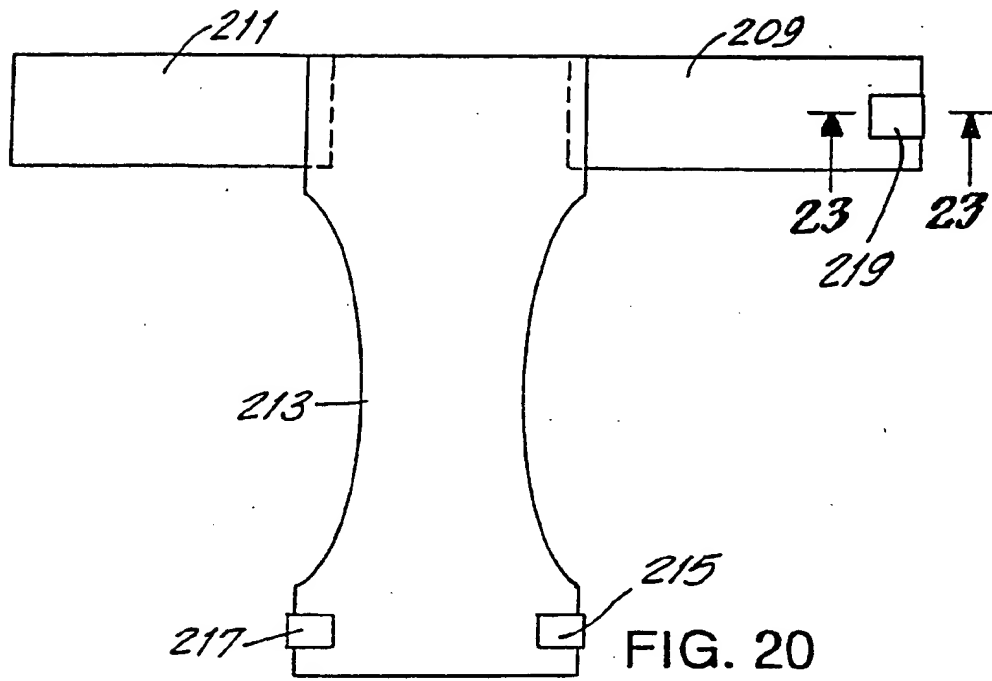


FIG. 11







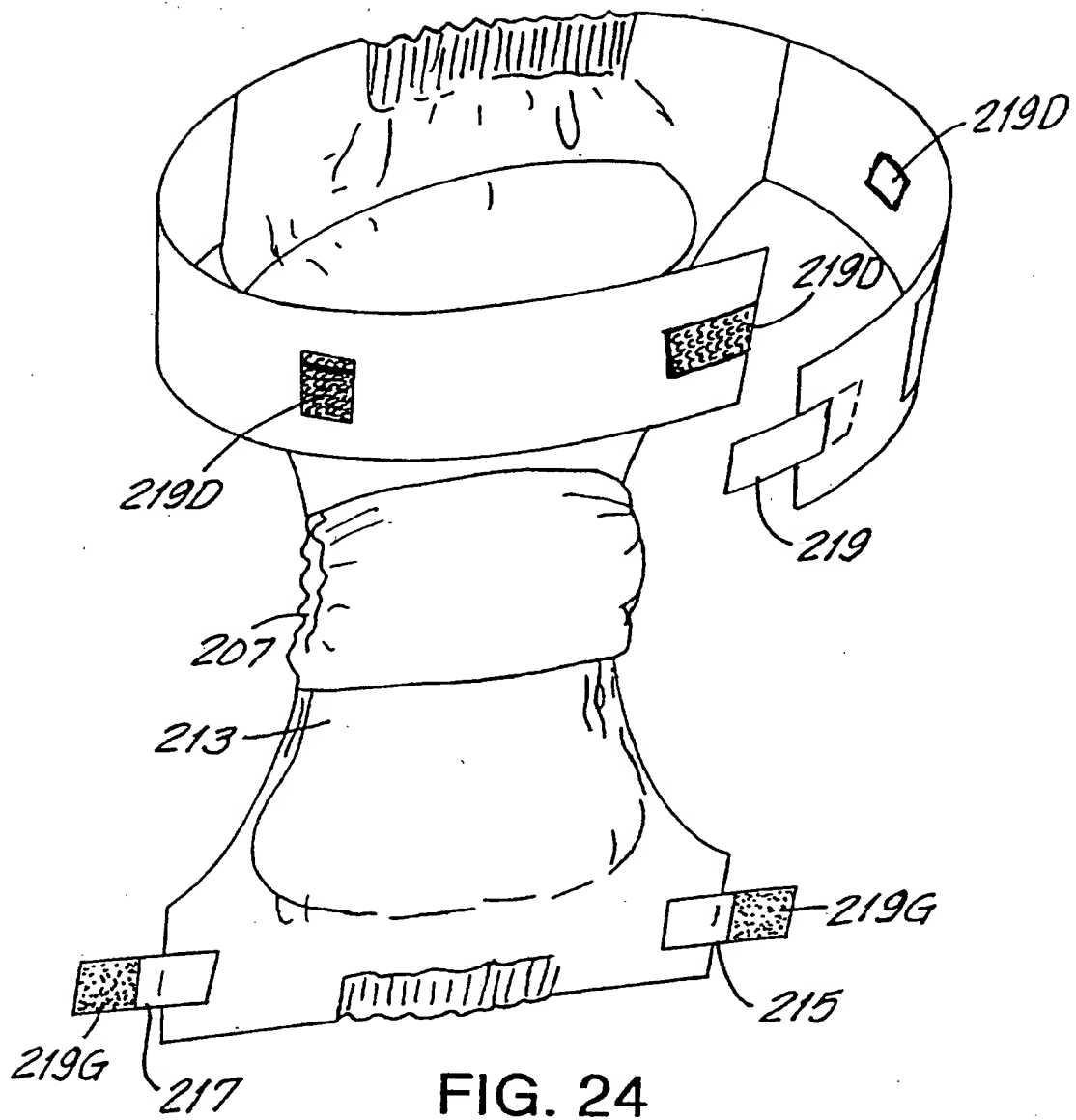


FIG. 24

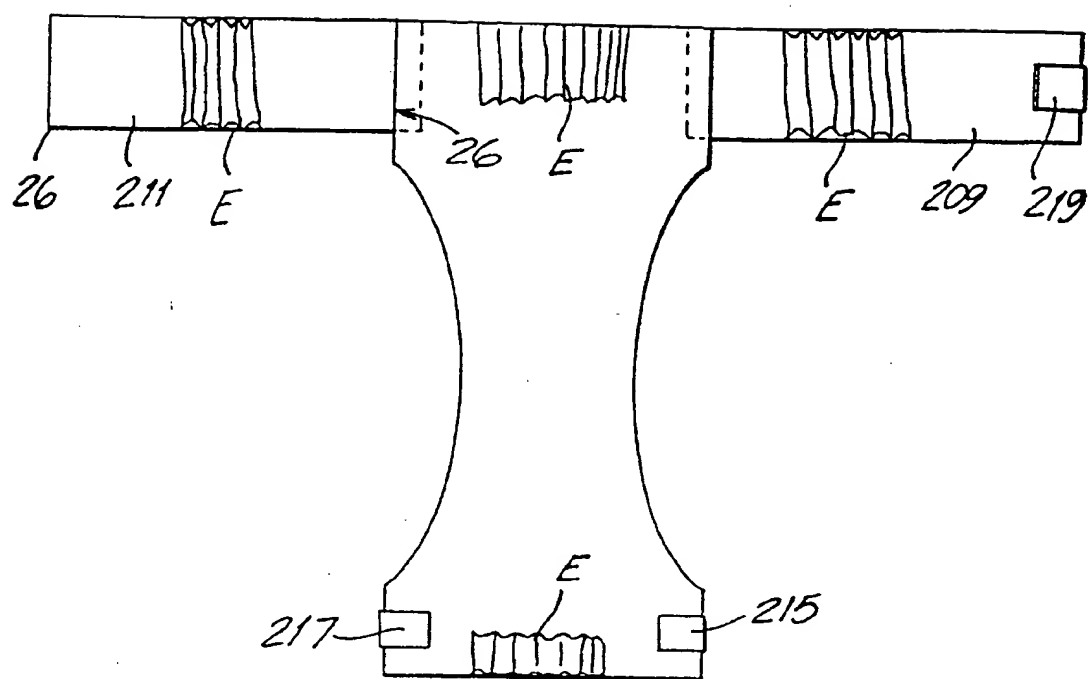


FIG. 25

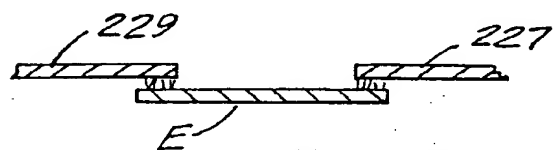


FIG. 26

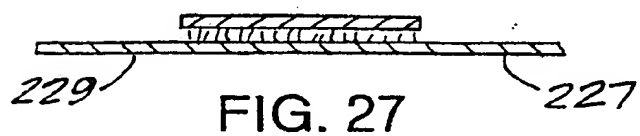


FIG. 27

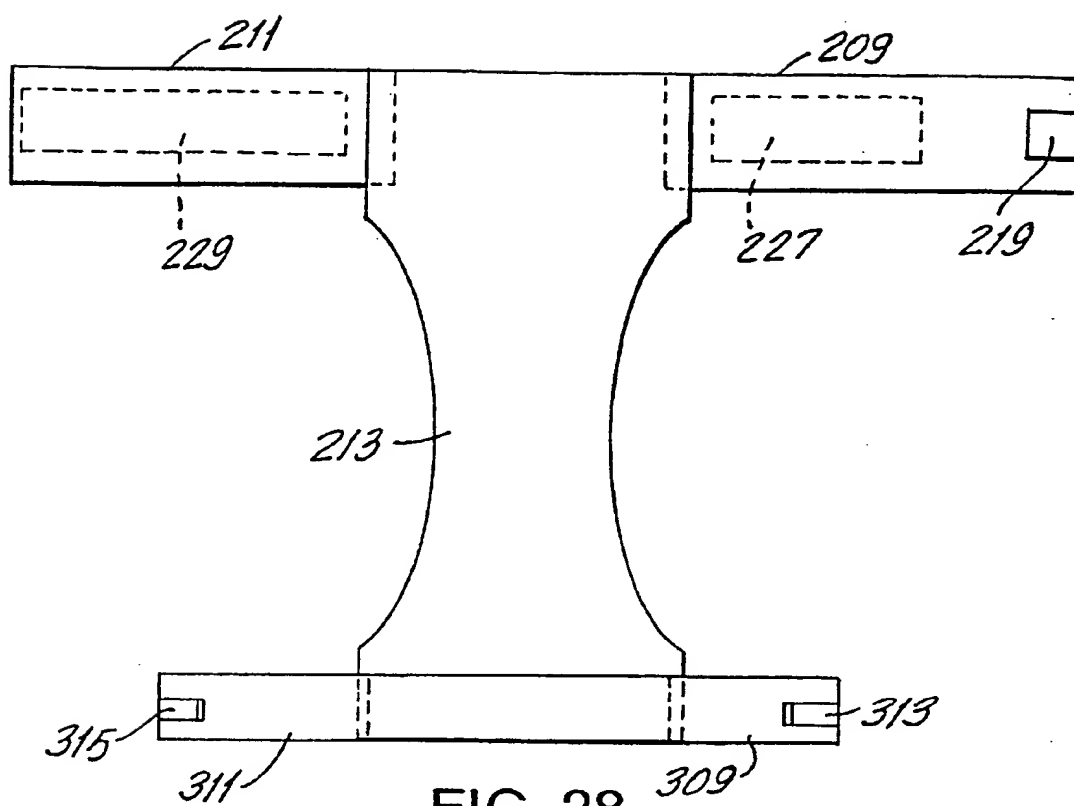


FIG. 28

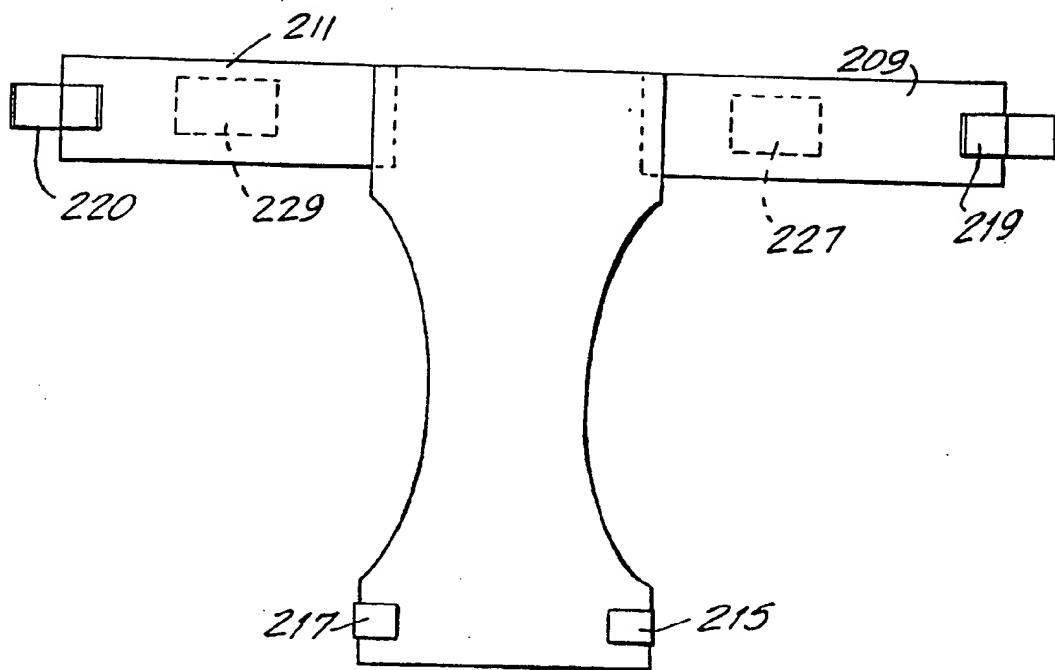


FIG. 29

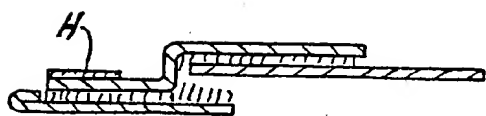


FIG. 31



FIG. 30



FIG. 33



FIG. 32

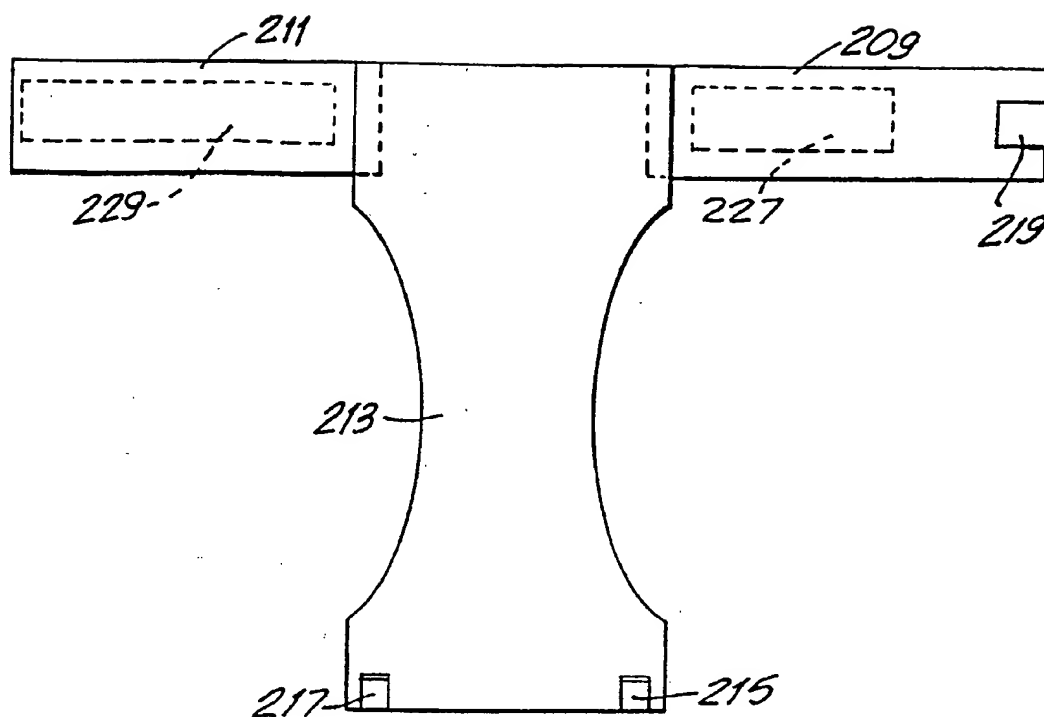


FIG. 34

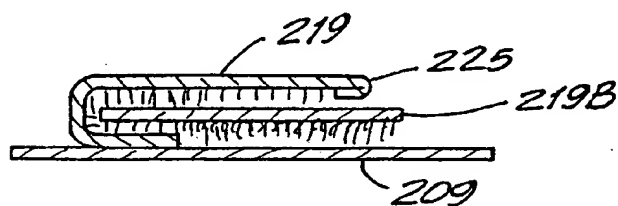


FIG. 35

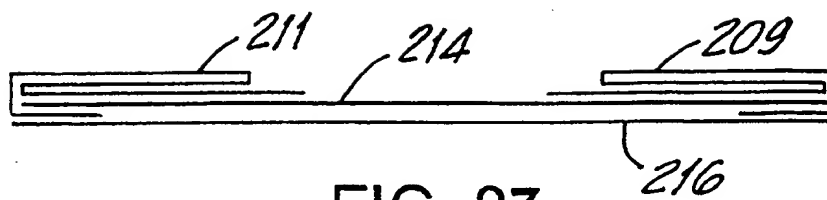


FIG. 37

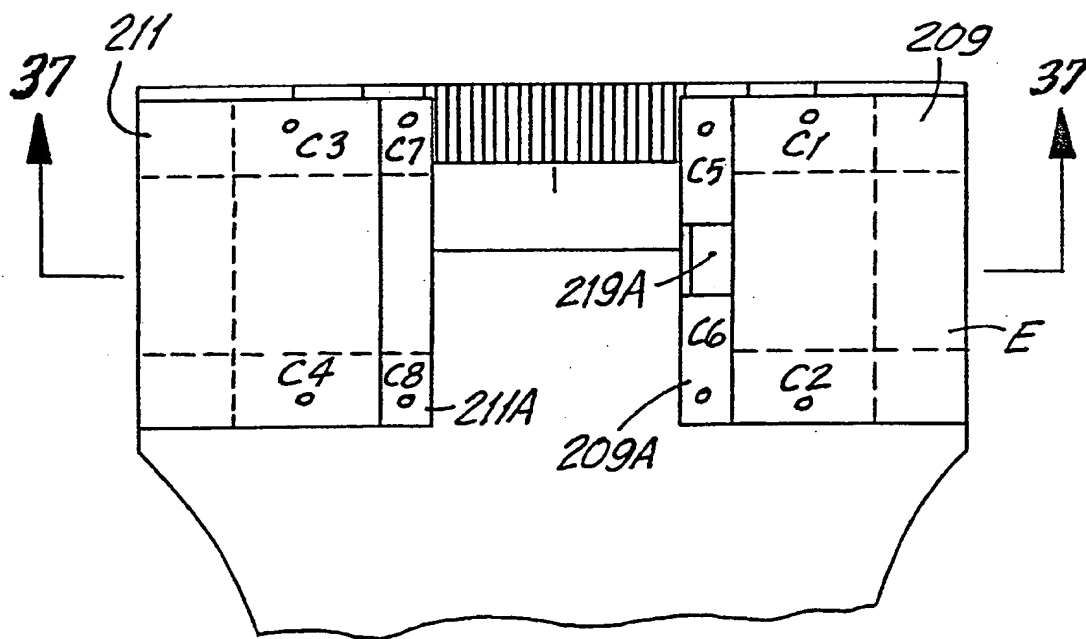



FIG. 36

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P.O./SB/01 (12-97)

**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	34294/20
First Named Inventor	Hamzeh Karami
COMPLETE IF KNOWN	
Application Number	Unknown
Filing Date	Herewith
Group Art Unit	Unknown
Examiner Name	Unknown

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ABSORBENT ARTICLES HAVING IMPROVED FASTENING SYSTEM

the specification of which (Title of the Invention)

☒ is attached hereto
OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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PTO/SB/01 (12-97)
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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)
09/844,726	04/27/01	
09/797,334	03/01/01	
09/376,282	08/18/99	
09/097,198	06/12/98	

☒ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

☐ Customer Number

OR

☒ Registered practitioner(s) name/registration number listed below

Place Customer Number Bar Code Label here

Name	Registration Number	Name	Registration Number
Morton Amster	16,677	Joel E. Lutzker	29,406
Michael J. Berger	25,829	Ira E. Silfin	33,785
Daniel S. Ebenstein	24,932	Leonard S. Sorgi	33,211
Kenneth P. George	30,259	Neil M. Zipkin	27,476
Phillip H. Gottfried	25,871	Neal L. Rosenberg	21,088
Abraham Kasdan	32,997		
Anthony E. Lo Cicero	29,403		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number or Bar Code Label ☒ Correspondence address below

Name	Neal L. Rosenberg, Esq.				
Address	AMSTER, ROTHSTEIN & EBENSTEIN				
Address	90 Park Avenue				
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Country	US	Telephone	212-336-8100	Fax	212-336-8001

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))		Family Name or Surname	
Hamzeh		Karami	
Inventor's Signature	Date		
Residence: City	Lockhaven	State	PA
		Country	US
Post Office Address	300 Water Street		
Post Office Address			
City	Lockhaven	State	PA
		ZIP	17748
		Country	US

☐ Additional inventors are being named on the supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

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DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet Page <u>3</u> of <u>4</u>
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
Kambiz				Damaghi			
Inventor's Signature						Date	
Residence: City	Kings Point	State	NY	Country	US	Citizenship	
Post Office Address	9 Farmers Road						
Post Office Address							
City	Kings Point	State	NY	ZIP	11021	Country	US
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
Babak				Damaghi			
Inventor's Signature						Date	
Residence: City	Kings Point	State	NY	Country	US	Citizenship	
Post Office Address	8 Creek Road						
Post Office Address							
City	Kings Point	State	NY	ZIP	11024	Country	
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature						Date	
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		ZIP		Country	

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